NIAGARA MOHAWK

NIAGARA MOHAWK POWER CORPORATION/300 ERIE BOULEVARD WEST, SYRACUSE, N.Y. 13202/TELEPHONE (315) 474-1511

ORIGINAL

April 22, 1998

Acting Secretary David Boergers
Federal Energy Regulatory Commission
825 North Capitol Street, N.E.
Washington, D.C. 20426

Re: **Niagara Mohawk Power Corporation's**
New License Applications For:
Middle Raquette River Project No. 2320, and 012
Lower Raquette River Project No. 2330, and 033
Carry Falls Project No. 2060, and 002
Upper Raquette River Project No. 2084; 006
Filing of Settlement Offer and This Separate Explanatory Statement

Dear Secretary Boergers:

Pursuant to 18 CFR §385.602, enclosed for filing please find an original and eight (8) copies of a Settlement Offer that was recently executed by, inter alia, Niagara Mohawk Power Corporation (Niagara Mohawk), the New York State Department of Environmental Conservation (NYSDEC), the United States Fish and Wildlife Service (USF&WS), New York Rivers United (NYRU) and several other governmental agencies (GA's) and non-governmental organizations (NGO's) as regards the relicensing of the above-referenced hydroelectric projects (hereinafter collectively referred to as the "Raquette River Projects").

Middle Raquette River Project No. 2320 and Lower Raquette River Project No. 2330 are "Class of 1993" projects for which new licenses have yet to issue. Carry Falls Project No. 2060 and Upper Raquette River Project No. 2084 have initial licenses expiring on January 31, 2001 and January 31, 2002 respectively. As regards the later two projects, with this Settlement Offer,

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the second and third stage relicensing process documents will incorporate the Settlement Offer's resolution of concerns in the text of the new license applications and yield new license application submittals to the Commission on or about September 30, 1998 -- well ahead of the two year window prior to expiration of those initial licenses. For all four projects referenced above, the three stage consultation process outlined in the Commission's regulations at 18 CFR §16.8 was utilized. The attached three page relicensing status table more specifically summarizes relicensing facts.

A separate Explanatory Statement is required to accompany Settlement Offer submittals by 18 CFR §385.602(c)(ii). This transmittal letter should be considered that Explanatory Statement as the contents hereof assist in documenting and placing into perspective the fact and effect of the Settlement Offer's execution, as well as the efficacy of the Commission's expeditious review and approval of same.

Pursuant to the pertinent Commission regulation at 18 CFR §385.602(f), those intervenor participants in the above-referenced Commission's dockets for Raquette River Projects' relicensing have twenty (20) days from the filing date hereof to provide comment on same to the Commission. Within thirty (30) days of the Settlement Offer's filing date, any reply comments are due at the Commission.

I. INTRODUCTION

The purpose of the Settlement Offer is to document the areas of agreement that exist, after lengthy discussions and negotiations that took place between November, 1995 and the present, with regard to the various aspects of the relicensure, construction, operation and maintenance of the Raquette River Projects, for which new licenses and water quality certifications either are, or will shortly be, sought by Niagara Mohawk from the Commission and NYSDEC, respectively. The enclosed Settlement Offer will help both the Commission and NYSDEC expedite the relicensing process by providing agreed upon resolutions to expressed resource concerns vis-a-vis the above-referenced projects.

For ease of reference and understanding, attached hereto is Figure 1. This figure sets forth the location of the Raquette River Projects in the Raquette River basin of St. Lawrence County in Northern New York.

As hereinafter detailed in II. BACKGROUND, a principal motivation for the Settlement Offer was the desire to reach a mutually agreed upon resolution of issues emanating from Niagara Mohawk's making 401 water quality certificate applications to NYSDEC in support of its new FERC license applications for each of the four Raquette River Projects. Of equal importance, however, were the significant role that recommendations from consulted resource agencies play in the Commission's licensing decisions, as well as the desire to provide a vehicle for coalescing the substantial input from NGO's into an end product that can work for everyone concerned.

II. BACKGROUND

Pursuant to letter dated December 10, 1992 from Mr. Dean Shumway, FERC Director, Division of Project Review-OHL, Niagara Mohawk has been required to submit quarterly progress reports on actions being undertaken to resolve the denials (without prejudice) of several water quality certifications, Middle and Lower Raquette River Project Nos. 2320 and 2330 being two such denials, issued by the NYSDEC on November 19, 1992. Niagara Mohawk has submitted quarterly progress reports responding to the FERC's December 10, 1992 letter, the last having been dated on or about March 5, 1998.

Activity between Niagara Mohawk and the NYSDEC with regard to Middle Raquette River Project No. 2320 and Lower Raquette River Project No. 2330 has related to the administrative hearing proceedings ongoing before the NYSDEC Administrative Law Judge (ALJ) and ensuing settlement discussions to resolve matters of concern and 401 water quality certificate issuance without further administrative litigation. The NYSDEC hearing was convened in response to Niagara Mohawk requests that NYSDEC review the legality of the Department Staff in denying the above-referenced water quality certification applications.

In past 401 progress report submissions to FERC, Niagara Mohawk mentioned two ancillary developments to the administrative hearing process being pursued before an ALJ of the NYSDEC. The first of these ancillary developments was the U.S. Supreme Court's May 31, 1994 decision in PUD No. 1 of Jefferson County et ano v. State of Washington, 114 S. Ct. 1900 (1994).

The second ancillary development was the U.S. Supreme Court's June 6, 1994 denial of the State of New York's Certiorari petition, which petition had sought review of the New York Court of Appeals decision in Niagara Mohawk Power Corporation v. New York State Department of Environmental Conservation, 82 N.Y. 2d 191 (1993).

Most developments in the state administrative hearing process before the ALJ appointed by the NYSDEC have related to the effect of these two judicial decisions. Parties on both sides of the issues being litigated in the administrative proceeding before the NYSDEC have taken the position that either the Jefferson County or Niagara Mohawk decision is controlling and dispositive of the contents of 401 water quality certificates at issue between Niagara Mohawk and the NYSDEC. The end result of this colloquy has been an NYSDEC initiated and facilitated effort to reach a negotiated settlement of all matters outstanding.

In furtherance of those settlement efforts, the NYSDEC mailed notices of settlement discussions to entities listed both on FERC's individual project service lists and to the parties to Niagara Mohawk's administrative appeal to the NYSDEC. The participants in these settlement discussions mutually determined to proceed on a river basin-by-river basin basis. The Raquette River Projects are the third set of projects on which the parties have focussed. Black River Project No. 2569 and Beebee Island Project No. 2538 were the second set of projects selected on which to focus settlement discussions, Niagara Mohawk's eight development Beaver River Project No. 2645 having been the first. A Settlement Offer was submitted to the Commission for Beaver River Project No. 2645 in late May, 1995 and a Settlement Offer was submitted to the

Commission for Black River Project No. 2569 and Beebee Island Project No. 2538 circa October 13, 1995. FERC approved those Settlement Offer submissions in new license issuance orders dated August 2, 1996 (for Beaver River Project No. 2645, 76 FERC 61,152) and December 24, 1996 (for Black River Project No. 2569 and Beebee Island Project No. 2538, 77 FERC 61,305 and 61,306 respectively).

FERC's OHL Staff has been an invitee and/or an attendee for all of the plenary sessions and at most of the Raquette River Projects technical sessions (Frankie Green). As more specifically detailed in Section 1.6 (p. 1-4) of the Settlement Offer, several "plenary" sessions were held and at least fifty technical or negotiating sessions have been held, as well as twenty-three days of site/field sessions -- all to the end of comprehensively focussing on the issues inherent in the relicensing of the thirteen developments of the Raquette River Projects. Meanwhile, Niagara Mohawk and various other parties had successfully asked the NYSDEC's ALJ to adjourn the administrative appeal hearings so the parties can continue to pursue settlement discussions for the Middle and Lower Raquette River Project Nos. 2320 and 2330. The end result of these discussions and negotiations is the attached Settlement Offer.

III. MATERIALS AVAILABLE

The signators to the Settlement Offer have had available to them the Application for a Major License for the Middle and Lower Raquette River Project Nos. 2320 and 2330, filed in 1991, as amended and supplemented by responses to Additional Information Requests (AIR's),

as well as comments thereon, interventions in the FERC docket, their professional judgment and expertise and the benefit of the several plenary and technical sessions detailed in the "BACKGROUND" section above. For Upper Raquette River Project No. 2084 and Carry Falls Project No. 2060, preconsultation reports were available, as was the Initial Consultation Document (ICD) from the first stage of consultation and numerous study reports. Settlement Offer Appendix 1 sets forth an expansive listing of the various studies and information available to the signators.

IV. SIGNATORS

The Commission's regulations [18 CFR §385.602(b)] indicate that a Settlement Offer may be made by any participant in a proceeding. This Settlement Offer has been executed by Niagara Mohawk (the new license applicant) and the various other GA or NGO entities noted below, all of whom have participated in one way or another in settlement discussions. These discussions were initiated and facilitated by the NYSDEC and were an outgrowth of administrative litigation before the NYSDEC in the context of the NYSDEC's November 19, 1992 denial of Niagara Mohawk's requests for 401 water quality certificates for Middle Raquette River Project No. 2320 and Lower Raquette River Project No. 2330, respectively.

By agreement, Niagara Mohawk is submitting the Settlement Offer to the Commission while NYSDEC Staff is submitting a duplicate original to the NYSDEC ALJ in order to resolve

the administrative litigation involving the 401 water quality certificate denials that are pending before the NYSDEC as regards Middle and Lower Raquette River Project Nos. 2320 and 2330.

The Signators of the Settlement Offer are as follows:

APPLICANT

Niagara Mohawk Power Corporation

GA's

Adirondack Park Agency

National Park Service

New York State Department of Environmental Conservation

United States Fish and Wildlife Service

NGO's

(The) Adirondack Council

Adirondack Mountain Club

American Canoe Association

American Rivers

American Whitewater Affiliation

(The) Association for the Protection of the Adirondacks

(The) Jordan Club

National Audubon Society of New York State

New York Rivers United

New York State Conservation Council, Inc.

North Country Raquette River Advocates

St. Lawrence County

In addition to these signators, while the following two entities had no objections to the Settlement, those parties chose not to become signators. Those entities are:

New York Power Authority

Trout Unlimited, New York Council

V. MATTERS BETWEEN SIGNATORS THAT ARE COVERED BY THE SETTLEMENT OFFER BUT INTENDED TO FALL OUTSIDE THE TERMS AND CONDITIONS OF ANY COMMISSION-ISSUED NEW LICENSES AND/OR NYSDEC-ISSUED "401" WATER QUALITY CERTIFICATES

Referencing Section 2.20 of the Settlement Offer (p. 2-11), as between signators, the Settlement Offer basically covers two areas where signators have agreed on matters of interest but as to those two matters the signators do not wish coverage or inclusion in any Commission

and/or NYSDEC approval of same as a part of new license and/or water quality certification issuances. Those two mattes are:

A. commitments made as regards conveyance of non-project lands (Section 9); and

B. commitments made as regards creation of a Raquette River Advisory Committee and a Raquette River Fund (Sections 10.1, 10.2 and Appendix 2).

VI. PROPOSALS WITHDRAWN

As regards power enhancements, replacement of flashboards with other impounding structures and recreation facility proposals in Middle and Lower Raquette River Project Nos. 2320 and 2330, respectively, this Settlement Offer proposes changes, in the form of withdrawals, to various license application proposals (c.f. Section 2.16, pgs. 2-9 and 10).

VII. RELATIONSHIP TO OTHER DOCUMENTS

A. Salmon River Project No. 11408, Beaver River Project No. 2645 and Black River Project No. 2569/Beebee Island Project No. 2538 Settlement Offers

The submission of the enclosed Settlement Offer to the Commission is generally modeled on the Settlement Offers that have been submitted to the Commission on January 26, 1994 by

Niagara Mohawk for an initial license for the Salmon River Project No. 11408, as well as the May, 1995 Beaver River and the October 14, 1995 Black River/Beebee Island Projects' Settlement Offer submissions. In fact, the good will and enthusiasm generated by those successful and cooperative endeavors has fueled the momentum in pursuing similar results and the enclosed Settlement Offer work product for the thirteen hydro developments, spread out over four projects, for the Raquette River Projects.

B. Various Middle Raquette River Project No. 2320 and Lower Raquette River Project No. 2330 Interventions, Comments, Etc.

Several of the signators to the Settlement Offer may be in the happenstance of having signed the Settlement Offer, having previously sought intervention as a party in one or more of the above-referenced FERC relicensing docket and/or commented in opposition to the relicensure of the project, as same had been proposed by Niagara Mohawk's new license application submittals of late 1991. In these instances, Sections 10.8 - 10.10 (pgs. 10-3 to 10-6) of the Settlement Offer make it clear that a signator's prior opposition to FERC's issuance of a new license or NYSDEC issuance of a water quality certification to Niagara Mohawk for Middle Raquette River Project No. 2320 or Lower Raquette River Project No. 2330 is now superseded by that signator's agreement to "abide by and support the agreements and understandings commemorated" in the Settlement Offer (Section 10.4, p. 10-1).

C. Economics of Capacity Additions Proposed In New License Application Submittals for Middle and Lower Raquette River Project Nos. 2320 and 2330

In a letter to the Commission, dated November 1, 1994 and pertaining to the Project Nos. 2320 and 2330 and several other "Class of 1993" dockets, Niagara Mohawk had indicated that, due to an extreme downward trend in energy cost projections, many, if not all, of Niagara Mohawk's capacity-expansion plans affecting the various docketed "Class of 1993" relicensing project applications were expected to no longer be feasible. Further, Niagara Mohawk indicated that it would address the economic feasibility of each project's power enhancement proposal in conjunction with each respective project entrainment study report filing. Accordingly, this subject was addressed when Niagara Mohawk filed its entrainment study reports for Middle and Lower Raquette River Project Nos. 2320 and 2330 on October 3, 1995 and January 18, 1996, respectively (c.f. Section VII. E infra).

Current economic analysis of the new capacity/new facility proposals described in Niagara Mohawk's docketed applications for new license for the Middle and Lower Raquette River Project Nos. 2320 and 2330 shows that the new capacity proposals are not cost justified, save and except for the Higley Development of the Middle Raquette River Project No. 2320, where new powerhouse and associated redevelopment remains as proposed in the new license application.

Consequently, as part of the Settlement Offer (Section 2.16.1 and 2.16.2, pgs. 2-9 and 2-10), Niagara Mohawk has agreed to withdraw plans to construct the "power enhancements" it had proposed in the new license applications filings for the Colton, Hannawa and Sugar Island Developments of the Middle Raquette River Project No. 2320 and the Norwood, East Norfolk, Norfolk and Raymondville Developments of Lower Raquette River Project No. 2330. The reason is that such power enhancements are not economically justified, i.e. the benefit/cost ratios of these proposed power enhancements are currently and forseeably significantly less than 1.0 and the levelized net annual benefits were negative. The existing project works for these developments are appropriately shown in Niagara Mohawk's existing license drawings.

D. NEPA Processing Connotations for Project Nos. 2320 and 2330

As to Project Nos. 2320 and 2330, Niagara Mohawk recommends that the Commission consider and evaluate, as an alternative to be evaluated in the NEPA evaluation process: (1) the deletion of the aforementioned proposed power enhancements from any new licenses to be issued for the Middle Raquette River Project No. 2320 and the Lower Raquette River Project No. 2330; and (2) the continued operation of existing facilities at all seven developments (save and except for Higley Development for which new powerhouse construction has been and remains as the proposed course of action); and (3) the resolve of other issues within the jurisdiction of the Commission in the manner set forth in the Settlement Offer. Niagara Mohawk advocates this course of action to most effectively and efficiently conclude the currently pending new license application proceedings for Project Nos. 2320 and 2330.

In essence, by identifying the efficacy of, but not actually amending the new license applications for Project Nos. 2320 and 2330 to propose these changes, Niagara Mohawk wishes to avoid the protracted procedures that might be associated with a capacity amendment proposal espoused by it. Thus, in so proceeding the Commission can, via its NEPA process review alternatives, put itself in a new license issuance posture for each project as soon as the NEPA process has been concluded.

E. Fish Entrainment and Mortality Study for Middle and Lower Raquette River Project Nos. 2320 and 2330 ("Study Report Submissions") [1]

Settlement Offer negotiations were conducted on a separate and subsequent track from the preparation of the Study Report Submissions that Niagara Mohawk had previously filed. As the Settlement Offer is comprehensive in nature and not restricted to the finite resource view and issue addressed in the Study Report Submissions, the Settlement Offer reports a comprehensive resolution of these, as well as other, resource concerns. But for this Settlement Offer, Niagara Mohawk would continue to advocate for its Study Report Submissions recommendations, premised on that single issue basis. Being content, however, with the Settlement Offer's disposition of that issue, Niagara Mohawk intends that the Settlement Offer supersede the recommendations in this regard with regard to the Study Report Submissions. To the extent that

[1] By correspondence dated October 3, 1995 and January 18, 1996, Niagara Mohawk submitted "Fish Entrainment and Mortality Study Final Reports" to the Commission for these two projects, respectively. Such submission satisfied an additional information request (AIR) as well as providing an update on various aspects of project economics.

there may be inadvertent discrepancies, the comprehensive Settlement Offer terms and conditions govern and should be reflected in the terms and conditions of the new project licenses issued by the Commission.

F. Scoping Documents 1 and 2

In addition to the enclosed Settlement Offer being considered an additional alternative to be evaluated in NEPA documents, as more specifically detailed in the preceding "D. NEPA Processing Connotations" section, the Settlement Offer addresses and resolves issues over which disagreement existed at the time of the new license application filings for Project Nos. 2320 and 2330 and those issues identified for analysis in Scoping Document 1, dated February 1, 1995 and Scoping Document 2, dated May 26, 1995 (Scoping Documents 1 and 2).

G. Ready For Environmental Analysis Notice for Project Nos. 2320 and 2330

With the execution and submittal of this Settlement Offer, the submittal of all AIR responses and the existence of the above referenced Scoping Documents 1 and 2 for the Middle and Lower Raquette River Projects, Niagara Mohawk believes that the Commission should forthwith proceed to issue the Ready For Environmental Analysis Notices (REAN) for Middle and Lower Raquette River Project Nos. 2320 and 2330.

H. NYSDEC-Issued 401 Water Quality Certificates

Niagara Mohawk expects NYSDEC issuance of 401 water quality certificates within the next several months for all four of the Raquette River Projects. The NYSDEC-issued 401 water quality certificates will reflect the Settlement Offer's resolution of matters of interest or concern.

I. PowerChoice™ and Niagara Mohawk's Impending Fossil and Hydro Generation Asset Sale

Present

Niagara Mohawk is an investor owned gas and electric corporation that serves 1,556,000 electric customers and a population of 3,500,000 in a 24,000 square mile area of Upstate New York. Niagara Mohawk provides electricity to the largest customer service area in New York State. Niagara Mohawk's electric system, which includes all or portions of 37 counties and 669 cities, town and villages, extends from Lake Erie to New England's borders and from Canada to Pennsylvania. Power is currently supplied by Niagara Mohawk's seventy plus hydro stations (8%), coal (16%), oil (8%), oil/natural gas (9%) and nuclear generating units (13%), as well as through purchase contracts (46%) (1997 Statistics). Electricity is transmitted through an integrated operating network that is linked to other systems in New York State and in the Northeast for economic exchange and mutual reliability.

Changing Circumstances As Regards Fossil and Hydro Generation Ownership

Niagara Mohawk has however announced plans, and is pursuing various regulatory approvals, to sell its hydro and fossil generating assets in 1998 - 1999. Such a sale is in furtherance of the New York State Public Service Commission's policy thrust to introduce free market competition into the wholesale electric generation market in New York State by having the State's seven investor-owned electric utilities divest all or major portions of their generating assets [c.f. attached February 24, 1998 State of New York Public Service Commission (NYSPSC) news release as regards its approval of Niagara Mohawk's PowerChoice™ Rate and Restructuring Plan. The NYSPSC dockets pertinent to Niagara Mohawk's PowerChoice™ plans are PSC Case Nos. 94-E-0098 and 94-E-0099].

Niagara Mohawk has owned the Raquette River Projects and has been the initial licensee for same. However, Niagara Mohawk will likely not be the license holder for the term of the new license as it is implementing a plan to proceed to sell its fossil and hydro generating assets, inclusive of the Raquette River Projects, in the 1998 - 1999 time frame. Analogous generation asset sales are being, or have recently been, conducted by other FERC hydro project licensees such as the New England Power Company, Central Maine Power Company, Montana Power Company and General Public Utilities. Upon information and belief, the Commission has recently approved New England Power Company's sale/transfer of its hydro generating assets.

Niagara Mohawk's fossil and hydro generation asset sale is being conducted under New York State Public Service Commission (PSC)-auspices and pursuant to PSC policy direction and implementing orders. As indicated, the motivation for this sale is to lower the cost of electricity by forcing economies into the wholesale electric marketplace in New York State via free market competition. One mechanism to achieve this result is PSC interest in having New York's electric utilities divest major portions of their in-state generating assets. As part of the same effort, the PSC has also moved to stabilize and lower retail rates to electric customers and to restructure the state's electric utilities by allowing retail electric customers to choose their electricity provider in the near term.

While Niagara Mohawk's auction of its fossil and hydro assets fits into this larger context, it is also a means to minimize those net stranded cost payments that Niagara Mohawk's electric customers would have to pay as a price of electric industry restructuring as well as providing value to the shareholder.

Given initial license expiration for the Raquette River Projects and notwithstanding its near term intentions to proceed to sell its fossil and hydro generation assets, Niagara Mohawk has proceeded, at great time and expense, to obtain a new license for these projects in order to comply with the law and establish the terms and conditions pertaining to the Raquette River Project's new licenses. Any new licenses issued may subsequently become the subject of license transfer proceedings before the Commission.

VIII. METHOD/SCHEDULE FOR PROCEEDING WITH CARRY FALLS PROJECT NO. 2060 AND UPPER RAQUETTE RIVER PROJECT NO. 2084 NEW LICENSE APPLICATION SUBMITTALS [2]

- On or about April 24, 1998

  Niagara Mohawk will concurrently transmit 401 water quality certification requests and accompanying draft new license applications to NYSDEC for Carry Falls Project No. 2060 and Upper Raquette River Project No. 2084.

- On or about May 28, 1998

  Niagara Mohawk will concurrently transmit draft new license applications for "second stage" review and comment for Carry Falls Project No. 2060 and Upper Raquette Project No. 2084.

- ~ May 28, 1998 to August 26, 1998

  90-day "second stage consultation" review and comment period for both draft license applications.

- ~ August 26 - October 6, 1998 (or earlier if reviewers comment on the draft application sooner than 90 days)

  Niagara Mohawk to convert draft applications into final applications.

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[2] These two new license applications will include the final executed Settlement Offer and the text of application exhibits will reflect Settlement Offer content and issue resolution.

- ~ September 30, 1998 (or earlier if reviewers comment on the draft application sooner than 90 days)

  Niagara Mohawk files final applications (including settlement document) with FERC.

IX. CONCLUSION

Give-and-take was inherent in negotiation and execution of the enclosed comprehensive Settlement Offer with the sundry other parties that are either parties to this FERC relicensing docket and/or the 401 water quality certification proceeding ongoing before the NYSDEC, or are state or federal resource agencies.

Niagara Mohawk is aware that the Commission strongly supports settlements and, accordingly, it has joined with others in executing a Settlement Offer in an attempt to best respond to resource concerns, while managing the ultimate fate of these relicensing proceeding in a manner acceptable to the interested stakeholders, signators and the Commission. Niagara Mohawk believes that the Settlement Offer offers just such an opportunity.

Successful negotiation of this Settlement Offer will also yield the ancillary benefit of facilitating NYSDEC's issuance of 401 water quality certificates, thus allowing positive FERC action, on a river basin, on two pending "Class of '93" relicensing dockets, as well as facilitating the relicensing of Carry Falls Project No. 2060 and Upper Raquette River Project No. 2084 when the license applications for same are filed in September, 1998.

This Settlement Offer will also be submitted to the NYSDEC with a request that the Administrative Law Judge in the NYSDEC's administrative hearing remand the matter to NYSDEC Staff for 401 water quality certificate issuance forthwith. Based on past experience as regards Salmon River Project No. 11408, Beaver River Project No. 2645, Black River Project No. 2569 and Beebee Island Project No. 2538, 401 water quality certificates are expected to issue within the next several months.

If there are any questions pertaining to this submittal or additional copies of same are requested, please call the undersigned at (315) 428-5582.

Very truly yours,

Jerry L. Sabattis

Jerry L. Sabattis
Hydro Licensing Coordinator

/rs

Enclosures: Settlement Offer
Figure 1
3-Page Relicensing Status Table for Raquette River Projects
PSC Press Release Announcing It's Approval of Niagara Mohawk's PowerChoice Plan
Attached Service List

xc w/Encl: F. Green
J. M. Robinson
S. S. Hirschey
M. W. Murphy
Service List [3]

xc w/o Encl: Non-Service List Signators

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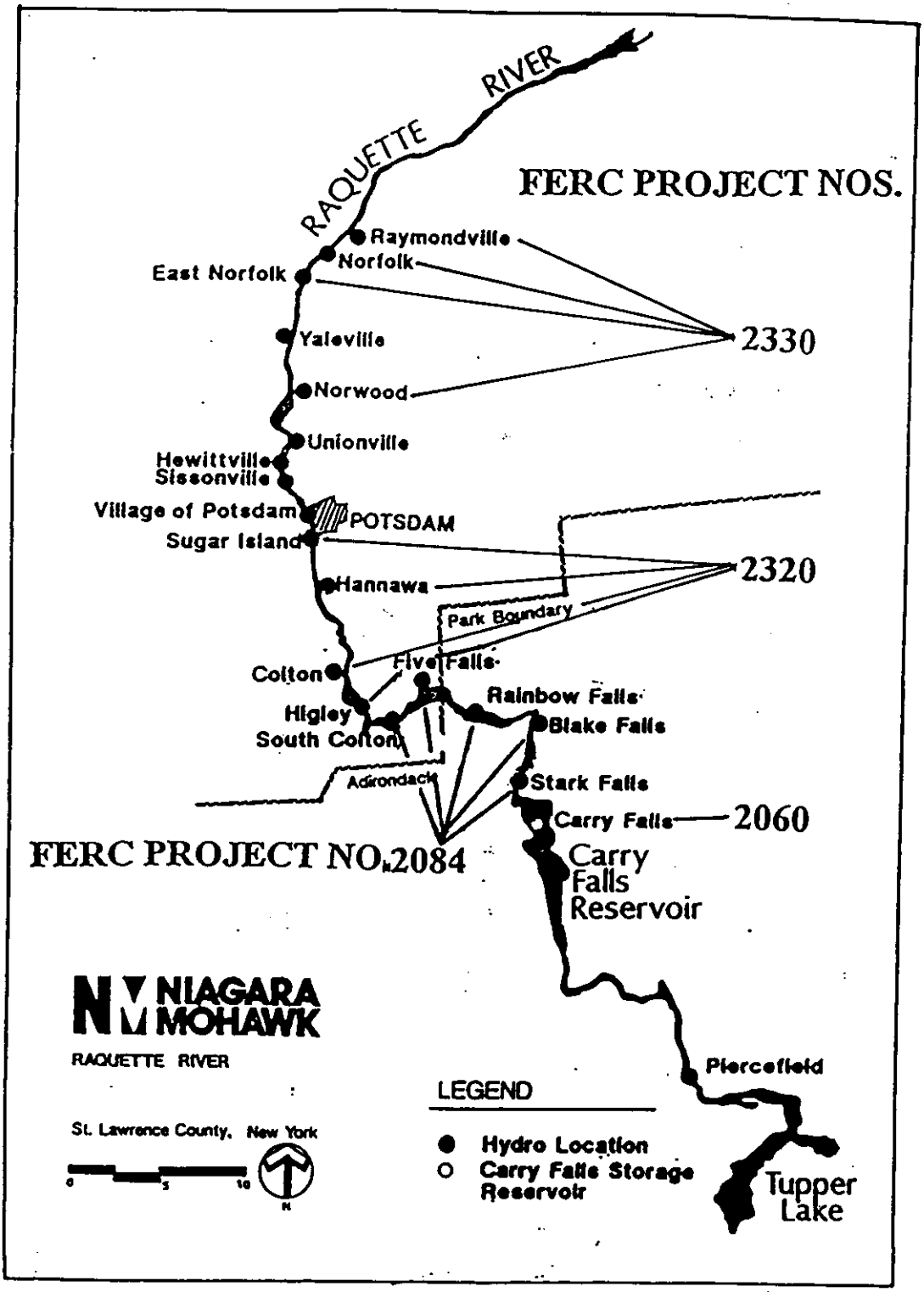
[3] If a Signator to the Settlement Offer or an entity on the attached Service List is already in receipt of a Settlement Offer, same is not transmitted anew herein.

FIGURE 1

RAQUETTE RIVER PROJECTS

FERC PROJECT NOS. 2060, 2084, 2320 AND 2330



NIAGARA MOHAWK POWER CORPORATION'S
RELICENSING OF RAQUETTE RIVER PROJECTS:

EVENT	CARRY FALLS PROJECT #2060	UPPER RAQUETTE RIVER PROJECT #2084	MIDDLE RAQUETTE RIVER PROJECT #2320	LOWER RAQUETTE RIVER PROJECT #2330
INITIAL LICENSE FACTS				
Issuance Date	2/2/51	2/5/52	6/12/64	7/15/64
Effective Date	2/1/51	2/1/52	11/1/49	11/1/49
Expiration Date	1/31/2001	1/31/2002	12/31/93	12/31/93
"CLASS OF 1993" MEMBER	No	No	Yes	Yes
ANNUAL LICENSE IN EFFECT	No	No	Yes (66 FERC 61,145)	Yes (66 FERC 61,145)
NEW LICENSE FACTS				
NOTICE OF INTENT TO RELICENSE FILED WITH FERC	Yes	Yes	Yes	Yes
REQUISITE PUBLIC MEETING HELD	Yes	Yes	Yes	Yes
FIRST STAGE OF CONSULTATION [1]				
Initial Consultation Document (ICD) Out For Comment	Yes	Yes	Yes	Yes
ICD Comments Received	Yes	Yes	Yes	Yes

[1] Refers to FERC's three stage consultation process pursuant to Commission regulations at 18 CFR §16.8.

NIAGARA MOHAWK POWER CORPORATION'S
RELICENSING OF RAQUETTE RIVER PROJECTS:

EVENT	CARRY FALLS PROJECT #2060	UPPER RAQUETTE RIVER PROJECT #2084	MIDDLE RAQUETTE RIVER PROJECT #2320	LOWER RAQUETTE RIVER PROJECT #2330
Studies Scoped	Yes	Yes	Yes	Yes
Studies Completed	Yes	Yes	Yes	Yes
SECOND STAGE OF CONSULTATION [1]				
Draft License Application Out for Comment	5/98	5/98	Yes	Yes
Comments Received	5/98 - 8/98	5/98 - 8/98	Yes	Yes
THIRD STAGE OF CONSULTATION [1]				
License Application Filed With FERC	9/98	9/98	Yes	Yes
401 WQC Requested [2]	4/98	4/98	Yes	Yes
401 WQC Issued or Denied	N/A [3]	N/A	Denied - Appeal Pending	Denied - Appeal Pending
Deficiencies/AIR Responses Done	N/A	N/A	Yes	Yes
FERC Application Acceptance	N/A	N/A	Yes	Yes

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[2] "401" Water Quality Certification application to New York State Department of Environmental Conservation.

[3] N/A means not yet available.

NIAGARA MOHAWK POWER CORPORATION'S
RELICENSING OF RAQUETTE RIVER PROJECTS:

EVENT	CARRY FALLS PROJECT #2060	UPPER RAQUETTE RIVER PROJECT #2084	MIDDLE RAQUETTE RIVER PROJECT #2320	LOWER RAQUETTE RIVER PROJECT #2330
NEPA Document Status	N/A	N/A	SD [4]	SD [4]
FERC's NEPA Intent	N/A	N/A	EIS [5]	EIS [5]
Settlement Offer Coverage	Yes	Yes	Yes	Yes

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[4] Scoping Documents 1 and 2, dated February 1, 1995 and May, 1995, respectively prepared by Commission Staff; no Ready for Environmental Analysis notice yet issued.

[5] According to Scoping Document 2, May 1995, FERC Staff contemplates preparation of an Environmental Impact Statement (EIS) for Middle and Lower Raquette River Projects Nos. 2320 and 2330.

PSC Press Release

STATE OF NEW YORK

Public Service Commission

John F. O'Mara, Chairman

Three Empire State Plaza, Albany, NY 12223

Further Details: (518) 474-7080
http://www.dps.state.ny.us
FOR RELEASE: IMMEDIATELY

PSC APPROVES REVISED NIAGARA MOHAWK POWERCHOICE PLAN

—Over $2 Billion in Customer Savings—
— Increased Customer Charges Rejected: No Customer to See Bill Increases —

Albany, February 24 — The New York State Public Service Commission today approved a revised Niagara Mohawk Power Corporation PowerChoice Rate and Restructuring Plan that will save customers over $2 billion over the next five years and allow them to choose their energy supplier no later than 1999. The Commission rejected rate design changes that would have increased bills for some residential and small commercial customers.

"The PowerChoice plan offers a vehicle for arresting and reversing the long chain of rate increases brought on by poor utility decisions and failed government policies over the past two decades," John F. O'Mara, Chairman of the Commission stated. "PowerChoice will not only avoid double-digit rate increases over the next several years, but it will also expedite the development of a competitive marketplace which is so important to ensuring that the mistakes of the past are not repeated. By implementing PowerChoice, we will reduce prices for residential and commercial customers by 3.2 percent during the first three years. Economic development in the communities served by the company will be strengthened by reducing prices for the largest industrial and commercial customers by 25 percent. In total, the PowerChoice agreement will save customers over $2 billion during the next several years."

Under PowerChoice, Niagara Mohawk agrees to absorb nearly $2 billion over the next several years, a substantial contribution to reducing stranded costs. As part of the PowerChoice approval, the Commission also approved the company's Master Restructuring Agreement (MRA) that will terminate, restructure or amend 29 power purchase agreements with 16 independent power producers and will enable Niagara Mohawk to reduce rates by hundreds of millions of dollars. In addition, the various IPPs will own 25% of the company's stock as part of the MRA.

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A diverse group of 20 parties supported a settlement agreement filed in the PowerChoice proceeding on October 10, 1997. The group consisted of the company, the Commission staff, the State Department of Economic Development and the Job Development Authority (jointly), New York State Community Action Association, Empire State Development Corporation, New York Power Authority, International Brotherhood of Electrical Workers Local 97, Association for Energy Affordability, National Association of Energy Services Companies, Multiple Intervenors, Pace Energy Project, Natural Resources Defense Council, Adirondack Council, New York Rivers United, the Settling Independent Power Producers, Independent Power Producers of New York, Inc., Steam Host Action Group, Sithe/Independence Power Partners, L.P., and Joint Supporters by the E Cubed Company. The plan, as revised by the Commission today, will take effect between three and six months following issuance of the Commission's written decision and will remain in effect through 2002.

Attached is a summary of the PowerChoice Plan as approved by the Commission today. Niagara Mohawk serves approximately 1.5 million electric customers in a wide upstate region stretching from the state's borders with Canada and Pennsylvania in the west and southwest, respectively, to its border with New England in the east, and north throughout the Adirondack Region to the Canadian border.

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New York State Public Service Commission Approves Revised Niagara Mohawk Power Corporation "PowerChoice Plan" Summary of Major Elements As Approved

In making a decision on Niagara Mohawk Power Corporation's "PowerChoice Plan," the New York State Public Service Commission considered comments received from the 11 public statement hearings and consumer forums it held throughout Niagara Mohawk's service territory, as well as comments received through its Opinion Line and Website. A copy of the Commission's written decision approving the PowerChoice Rate and Restructuring Plan, when issued, can be obtained from the Commission's website at **http://www.dps.state.ny.us** or from the Commission's Files Office, 14th Floor, 3 Empire State Plaza, Albany, NY 12223.

Rate Design Changes Rejected — No Customer to See Rate Increases; Low Income Program Expanded

One important change ordered by the Commission is the requirement that no residential or commercial customer experience any rate increases. In achieving that goal, the Commission rejected rate design changes calling for increased customer charges that were part of the revised PowerChoice plan submitted last October. This proposed change would have resulted in small bill increases for some residential and small commercial customers. As a result of the Commission's decision, residential and small commercial customers will realize reductions in their bills. Avoiding increases to small commercial customers will help the state's economic development goals. Many people at the Commission's 11 public statement hearings around the state advocated rejection of the proposed rate design changes.

As with other rate and restructuring plans previously approved by the Commission, more dollars are earmarked under PowerChoice for the residential and small commercial customer savings than for other categories of customers. The plan provides a 3.2 percent average decrease from current electric rates by the year

2000 for the residential and commercial categories of customers. Actual decreases will vary depending on usage.

Under PowerChoice, tariff rates for Niagara Mohawk's largest industrial and commercial customers will be reduced by 25 percent and other customers may be eligible for flexible rate programs. These reductions are designed to stimulate, and further renew, economic development opportunities in the company's service territory, which extends the breadth of upstate and is the largest geographically in the state.

PowerChoice includes an expansion of Niagara Mohawk's existing Low Income Customer Assistance Program (LICAP) to enroll and serve all 29,000 targeted income-eligible customers by the end of 2002. The expanded program will also target some recipients of the Child Assistance program, which is administered by the Department of Social Services, to provide assistance to those customers who are in transition from public assistance to work. The LICAP program provides payment assistance, arrears forgiveness, and energy management services, including comprehensive weatherization and energy education to participants.

Ability to Choose Energy Provider

Beginning in 1998, large industrial and commercial customers will have full retail access — that is, the ability to choose their energy supplier. By the end of 1999, all customers will be able to choose their own electricity provider. Customers who purchase electricity from a competing supplier will see a reduction in their charges from Niagara Mohawk equal to the average wholesale market price of the electricity plus a customer service credit agreed to in the settlement plan.

-more-

Niagara Mohawk will continue to deliver electricity over its transmission and distribution facilities, and it will continue to be the provider of electricity to customers who choose not to obtain power elsewhere. Niagara Mohawk has agreed to absorb, for the next three years, the risk of fluctuating market prices for these customers so that the price reductions provided for by PowerChoice will be assured.

Environmental and Public Policy Programs

The revised PowerChoice plan approved by the Commission provides $45 million during the first three years for demand-side management, research and development, and low-income energy efficiency programs. The Commission's approval of $45 million in expenditures by Niagara Mohawk brings to $233.1 million the total sum of required expenditures for environmental, energy efficiency and public policy programs by the six electric utilities whose restructuring plans the Commission has already approved.

Further, Niagara Mohawk has agreed to continue its program to remediate pollution at coal/gas production sites and to donate to the Adirondack Council 5,000 SO2 allowances for retirement. The company will develop over 10 megawatts of wind and solar generation and will transfer ownership or provide conservation easements for a number of environmentally significant land parcels in the Adirondacks to the State of New York.

Auction of Generation Facilities; Statewide Solution for Nuclear Power Facilities

PowerChoice requires Niagara Mohawk to divest itself of all its fossil and hydro generation units using an auction process. Initially, Niagara Mohawk may retain the rights to the electricity produced at the auctioned-off facilities.

The revised PowerChoice plan approved allows Niagara Mohawk to continue to operate its nuclear facilities while a statewide solution to nuclear power issues is pursued. At its February 18 meeting the Commission established a formal proceeding to further examine issues related to nuclear plants and the feasibility of applying market-based pricing to these facilities.

Stranded Cost Recovery — Niagara Mohawk to Absorb $2 Billion

Under PowerChoice, the company agreed to absorb an estimated $2 billion of stranded costs related to uneconomic purchases from IPPs and investment in its own generation. The settlement provides a means — a competition transition charge (CTC) — for the company to recover remaining stranded costs. The Commission noted that the bulk of the stranded costs were incurred in response to government policies designed to promote the independent power industry. The Commission determined that neither on-site generators nor newly formed municipal systems should be exempt from the CTC because to do so would increase the burden on remaining customers. However, the Commission did require that customers who already invested in on-site generation be grandfathered and not have to pay the CTC. The cut-off date for the grandfather provision will be established by the Commission after proposed tariffs are filed by Niagara Mohawk.

CERTIFICATE OF SERVICE

PROJECT: Lower Raquette River Hydroelectric Project #2330
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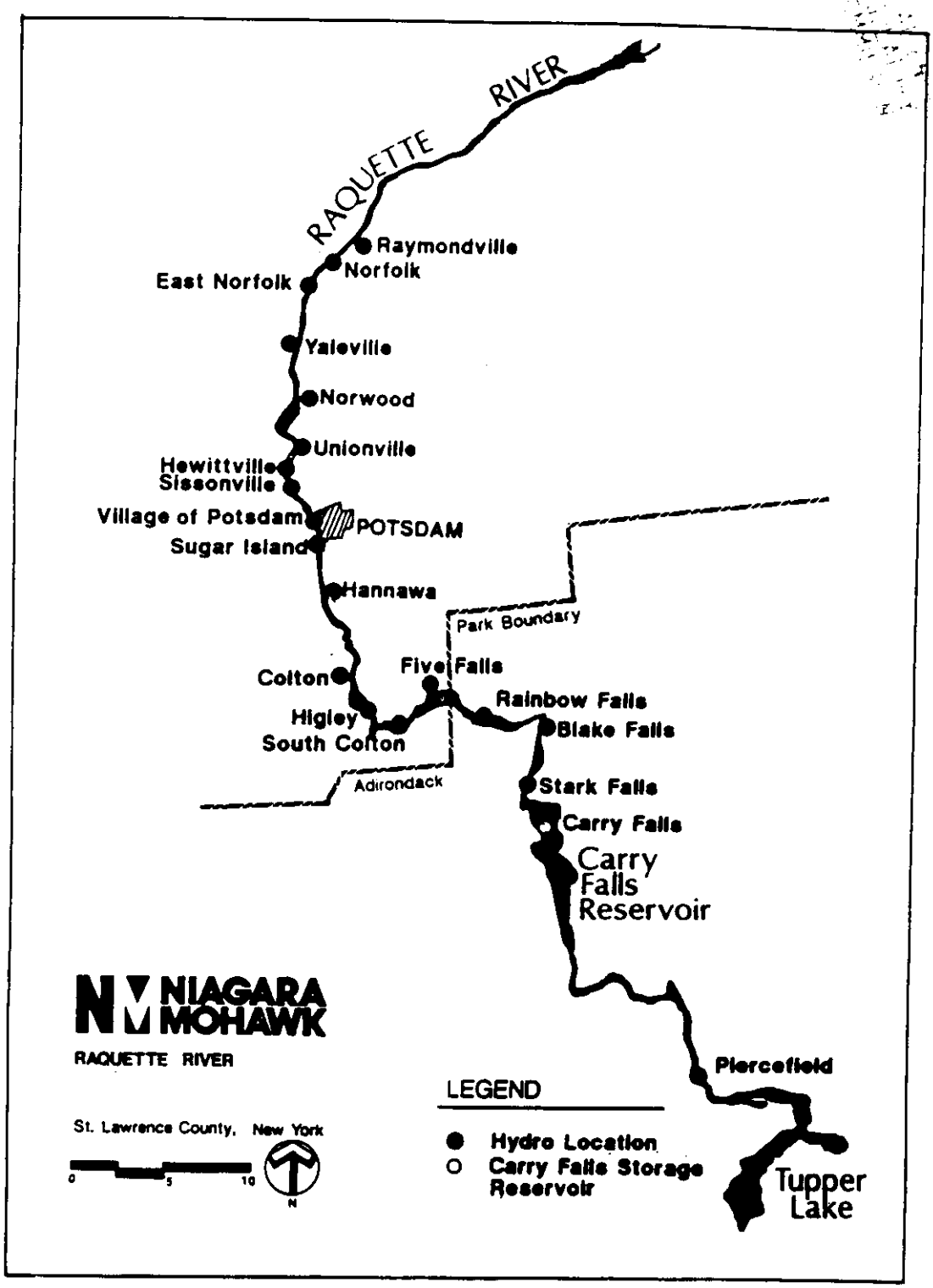
RAQUETTE RIVER PROJECTS

FERC PROJECT NOS. 2060, 2084, 2320 AND 2330



SETTLEMENT OFFER **FINAL** **MARCH 13, 1998**

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1.0 INTRODUCTION

1.1 PURPOSE

The purpose of this Settlement Offer (Settlement) is to document the areas of agreement that exist as the result of comprehensive settlement discussions between the signators with regard to the relicensing of the "Raquette River Projects" (see Table 1-1 and Figures 1-1 to 1-3) by the Federal Energy Regulatory Commission (FERC) and §401 Water Quality Certification (§401 WQC) therefor by the New York State Department of Environmental Conservation (NYSDEC). The Raquette River Projects included in this Settlement are:

- Carry Falls Project No. 2060;
- Upper Raquette River Hydroelectric Project No. 2084;
- Middle Raquette River Hydroelectric Project No. 2320; and
- Lower Raquette River Hydroelectric Project No. 2330.

This Settlement does not include those hydroelectric projects on the Raquette River that have been licensed or exempted by the FERC and that have initial license expiration dates after 2002. Thus, the projects that are not covered by this Settlement are:

- Piercefield Project No. 7387 of Niagara Mohawk Power Corporation;
- Potsdam Project No. 2869 of the Village of Potsdam, New York;
- Sissonville Project No. 9260 of Adirondack Hydro Development Corporation;
- Hewittville Project No. 2498 of Raquette Hydro Power Limited;
- Unionville Project No. 2499 of Raquette Hydro Power Limited; and
- Yaleville Project No. 9222 of Niagara Mohawk Power Corporation.

1.2 GOAL

The goal of this Settlement is to provide for power generation plus the long-term protection of, mitigation for damage to, and enhancement of the Raquette River's fish and wildlife resources as affected by the hydropower developments of the Raquette River Projects. The Settlement will also enhance opportunities for recreational and other river uses by providing for public access to project lands and reducing non-natural fluctuations in impoundments and riverine reaches affected by the developments in the Raquette River Projects. Finally, the Settlement will include provisions for monitoring, enforcement, updating, or revisitation of agreements.

This Settlement, having given equal consideration to power and non-power values, provides the terms and conditions for the resolution of the operational, fisheries, wildlife, water quality, land management and ownership, recreation and aesthetics issues raised by the signators, both as regards the issuance by FERC of new licenses for the Raquette River Projects and issuance by NYSDEC of §401 WQC's for the Raquette River Projects, and comments thereon by consulted resource agencies as well as various non-governmental organizations (NGO's).

1.3 LICENSEE

The Raquette River Projects were initially licensed to, and are currently owned, operated and maintained by, Niagara Mohawk Power Corporation of Syracuse, New York (Niagara Mohawk). Within this Settlement, the term licensee is used to globally represent Niagara Mohawk and any of its successors and/or assigns, as the licensee of the Carry Falls Project, the Upper Raquette River Hydroelectric Project, the Middle Raquette River Hydroelectric Project, and the Lower Raquette River Hydroelectric Project.

1.4 PROJECTS INCLUDED IN SETTLEMENT

1.4.1 CARRY FALLS PROJECT No. 2060

The initial fifty year license term for the Carry Falls Project expires January 31, 2001. The Project contains a 3,000 acre seasonal storage reservoir located on the Raquette River just upstream from the licensee's Upper Raquette River Hydroelectric Project. The Carry Falls Project consists of one non-generating development located on the Raquette River in the Town of Colton, St. Lawrence County, New York. The most upstream and downstream limits of Carry Falls Reservoir are respectively located about 76 and 68 river miles upstream of the Raquette River's confluence with the St. Lawrence River. The Carry Falls Project is included as part of this Settlement.

1.4.2 UPPER RAQUETTE RIVER HYDROELECTRIC PROJECT No. 2084

The Upper Raquette River Hydroelectric Project has an initial license term of fifty years that expires January 31, 2002. This project is located on the Raquette River between the licensee's Carry Falls Project and its Middle Raquette River Hydroelectric Project and consists of five developments located on the Raquette River in the Towns of Colton and Parishville, all within St. Lawrence County, New York. The five developments progressing downstream are: Stark, Blake, Rainbow, Five Falls, and South Colton. The uppermost Stark Development and the lowermost South Colton Development are respectively located about 66 and 52 river miles upstream of the Raquette River's confluence with the St. Lawrence River. The Upper Raquette River Hydroelectric Project is included as part of this Settlement.

1.4.2.1 Notice of Intent to Relicense

On January 17, 1996, the licensee filed with FERC notices of intent to relicense the Carry Falls Project No. 2060 and Upper Raquette River Hydroelectric Project No. 2084. An Initial Consultation Document, as well as a Pre-Consultation Document, of summary project facts has been the subject of "first stage" consultation since early April 1996. Various studies were conducted in 1996 and reports thereon prepared and circulated for review and comment between 1996 and 1997 (see Appendix 1). Preparation of draft and final applications for a new FERC license is on-going for the Carry Falls Project and the Upper Raquette River Hydroelectric Project. No §401 WQC application

has yet been made for these two projects. However, the §401 WQC application is planned to be filed with the NYSDEC in conjunction with the distribution of the "second stage" review draft license applications currently being prepared for each project. Additionally, this Settlement will be included, in its entirety, within the draft and final license applications prepared for each of these two projects.

1.4.3 MIDDLE RAQUETTE RIVER HYDROELECTRIC PROJECT No. 2320

The Middle Raquette River Hydroelectric Project had an initial license that was effective from November 1, 1949, until December 31, 1993. A new license application and application for §401 WQC for this project were filed with FERC on December 23, 1991, and the project currently operates pursuant to an annual license issued by FERC. No §401 WQC has yet been issued for this project. The licensee's request for same was denied by the NYSDEC in November 1992. The licensee appealed that denial to the NYSDEC and settlement discussions have ensued to the present. This project is located on the Raquette River between the licensee's Upper Raquette River Hydroelectric Project and its Lower Raquette River Hydroelectric Project and consists of four developments located on the Raquette River in the Towns of Colton, Parishville, Pierrepont, and Potsdam, all within St. Lawrence County, New York. The four developments progressing downstream are: Higley, Colton, Hannawa, and Sugar Island. The uppermost Higley Development and the lowermost Sugar Island Development are respectively located about 47 and 38 river miles upstream of the Raquette River's confluence with the St. Lawrence River. The Middle Raquette River Hydroelectric Project is included as part of this Settlement.

1.4.4 INTERMEDIATE PROJECTS

Between the licensee's Middle and Lower Raquette River Hydroelectric Projects, there are four hydroelectric facilities of others: the exempt Potsdam Project of the Village of Potsdam at River Mile 35, Adirondack Hydro Development Corporation's Sissonville Project at River Mile 33, and the exempt Hewittville and Unionville Projects operated by Raquette Hydro Power Limited at River Miles 32 and 31, respectively. None of these projects are included as part of this Settlement.

1.4.5 LOWER RAQUETTE RIVER HYDROELECTRIC PROJECT No. 2330

The Lower Raquette River Hydroelectric Project had an initial license that was effective from November 1, 1949, until December 31, 1993. A new license application and application for §401 WQC for this project were filed with FERC on December 23, 1991, and the project currently operates pursuant to an annual license issued by FERC. No §401 WQC has yet been issued for this project. The licensee's request for same was denied by the NYSDEC in November 1992. The licensee appealed that denial to the NYSDEC and settlement discussions have ensued to the present. This project consists of four developments located on the Raquette River in the Towns of Potsdam and Norfolk, in St. Lawrence County, New York. The four developments progressing downstream are: Norwood (followed by the licensee's Yaleville Project at River Mile 25.5 which is not included as part of this Settlement), East Norfolk, Norfolk, and Raymondville. The uppermost development and the lowermost development are respectively located about 28 and 20 river miles upstream of the

Raquette River's confluence with the St. Lawrence River. The Lower Raquette River Hydroelectric Project is included as part of this Settlement.

1.5 ADIRONDACK PARK BOUNDARY

The Adirondack Park boundary (Blue Line) passes through the Upper Raquette River Hydroelectric Project. The entire Carry Falls Project, and all of the Stark, Blake, and Rainbow Developments of the Upper Raquette River Hydroelectric Project are within the Blue Line. Part of the Five Falls Development of the Upper Raquette River Hydroelectric Project is also within the Blue Line.

1.6 SETTLEMENT BACKGROUND

This Settlement is a summary of the areas of agreement emanating from:

- The detailed license application exhibits for Middle and Lower Raquette River Hydroelectric Project Nos. 2320 and 2330;
- The joint Preconsultation and Initial Consultation Documents For Carry Falls Project No. 2060 and Upper Raquette River Hydroelectric Project No. 2084;
- Those studies and reports referenced in Appendix 1;
- Consultation meeting minutes and other consultation records that have been and will be developed for the projects;
- Settlement efforts as follows:
  - (a) Initial "Kick-off" Session with all Parties present including FERC: 11/28/95;
  - (b) Negotiation Sessions: 1/23/96, 1/31/96, 2/27/96, 3/11-12/96, 3/25-26/96, 4/10-11/96, 4/24/96, 7/11/96, 9/12-13/96, 3/5/97, 3/18-19/97, 4/3/97, 4/24-25/97, 5/5/97, 5/20-22/97, 6/4-5/97, 6/18/97, 7/8-9/97, 7/22-23/97, 8/12-13/97, 8/19/97, 9/4/97, 9/17/97, 9/29-30/97, 10/22/97, 12/4/97, 1/7/98;
  - (c) Technical Sessions: 10/22/96, 11/12/96, 11/15/96 (pm), 11/26/96, 12/10/96, 1/7-8/97, 2/6/97, 2/18-19/97, 3/4/97;
  - (d) Plenary Sessions: 2/14/96, 1/20-21/97, 6/19/97, 8/20/97, 9/18/97, 11/20/97;
  - (e) Site/Field Sessions: 4/30 - 5/1/96, 5/9/96, 6/25-26/96, 7/21-25/96, 8/5-9/96, 9/18/96, 9/25-27/96, 10/2-4/96, 11/15/96 (am), 10/15-16/97;
  - (f) Public Meeting: 5/8/96 (Carry Falls Project No. 2060 and Upper Raquette River Hydroelectric Project No. 2084 only).

Table 1-1
Hydroelectric Facilities on the Raquette River [1]

Hydro Development (Project)	FERC Project No. [2]	Surface Area Impounded (acres)	Dam at River Mile (to nearest ½mile) [5]
Piercefield [3]	7387	370	88.5
Carry Falls (Carry Falls)	2060	3000	68.0
Stark (Upper Raquette River)	2084	585	66.0
Blake (Upper Raquette River)	2084	650	62.0
Rainbow (Upper Raquette River)	2084	715	56.0
Five Falls (Upper Raquette River)	2084	120	54.0
South Colton (Upper Raquette River)	2084	225	52.0
Higley (Middle Raquette River)	2320	742	47.0
Colton (Middle Raquette River)	2320	195	45.0
Hannawa (Middle Raquette River)	2320	204	39.0
Sugar Island (Middle Raquette River)	2320	29	38.0
Potsdam [4]	2869 Exemption	300	35.0
Sissonville [4]	9260	30	33.0
Hewittville [4]	2498 Exemption	90	32.0
Unionville [4]	2499 Exemption	35	31.0
Norwood (Lower Raquette River)	2330	350	28.0
Yaleville [4]	9222	70	25.5
East Norfolk (Lower Raquette River)	2330	135	23.5
Norfolk (Lower Raquette River)	2330	10	22.5
Raymondville (Lower Raquette River)	2330	50	20.0

1 Shaded sites are not covered under this Settlement Offer for the "Raquette River Projects".
2 The project is a FERC licensed project unless otherwise noted by use of term "Exemption".
3 Licensee owned and operated project with a substantial initial license term that remains, and for which there is no obligation to file a Notice of Intent to relicense pursuant to 18 CFR Part 16.
4 Not owned or operated by the licensee.
5 River miles from Confluence of Raquette River with the St. Lawrence River

FIGURE 1-1

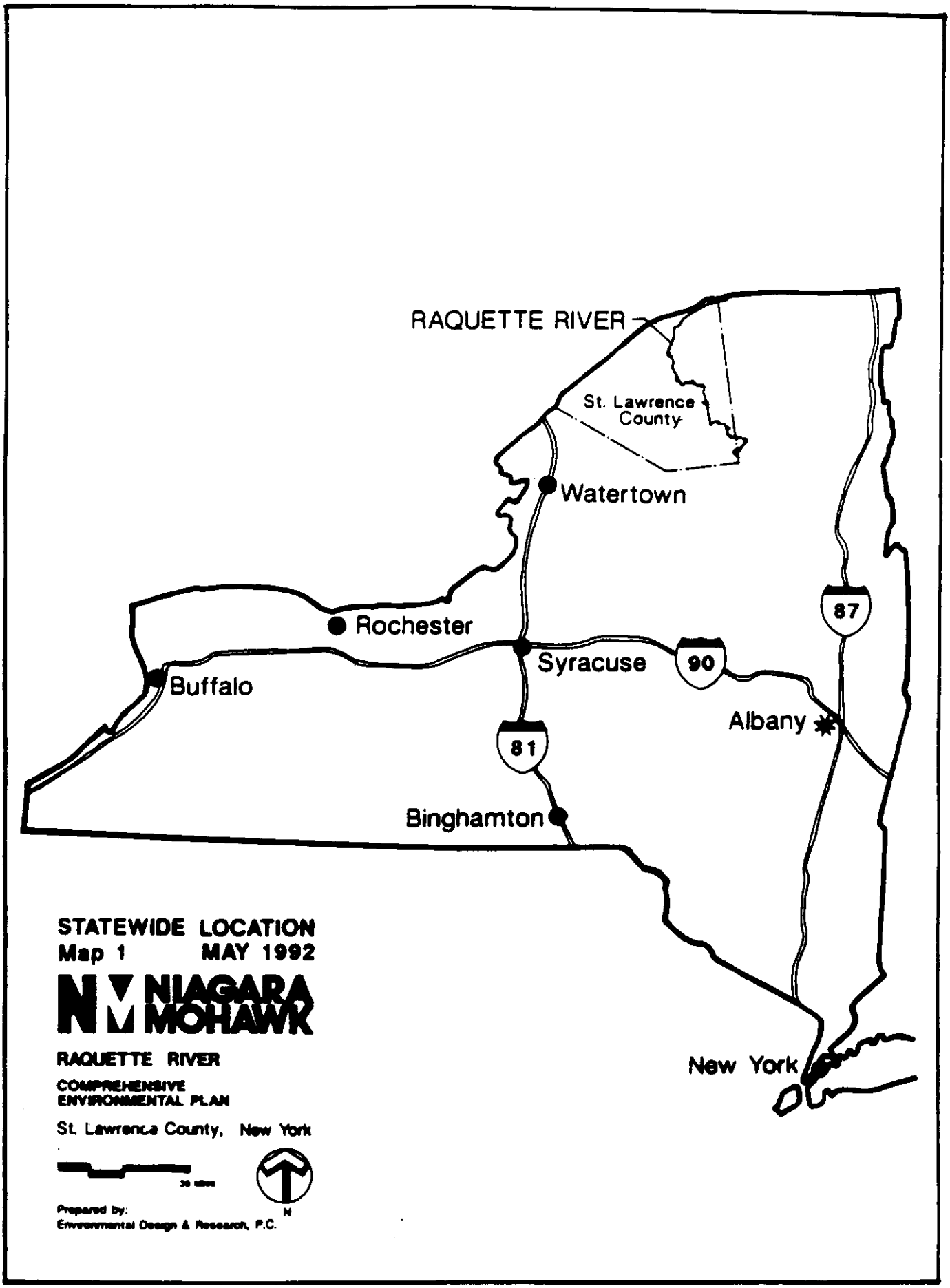

RAQUETTE RIVER
St. Lawrence County
Watertown
Rochester
Syracuse
Buffalo
Albany
87
90
81
Binghamton
New York
STATEWIDE LOCATION
Map 1 MAY 1992
NIAGARA MOHAWK
RAQUETTE RIVER
COMPREHENSIVE ENVIRONMENTAL PLAN
St. Lawrence County, New York
Prepared by:
Environmental Design & Research, P.C.
N

FIGURE 1-2

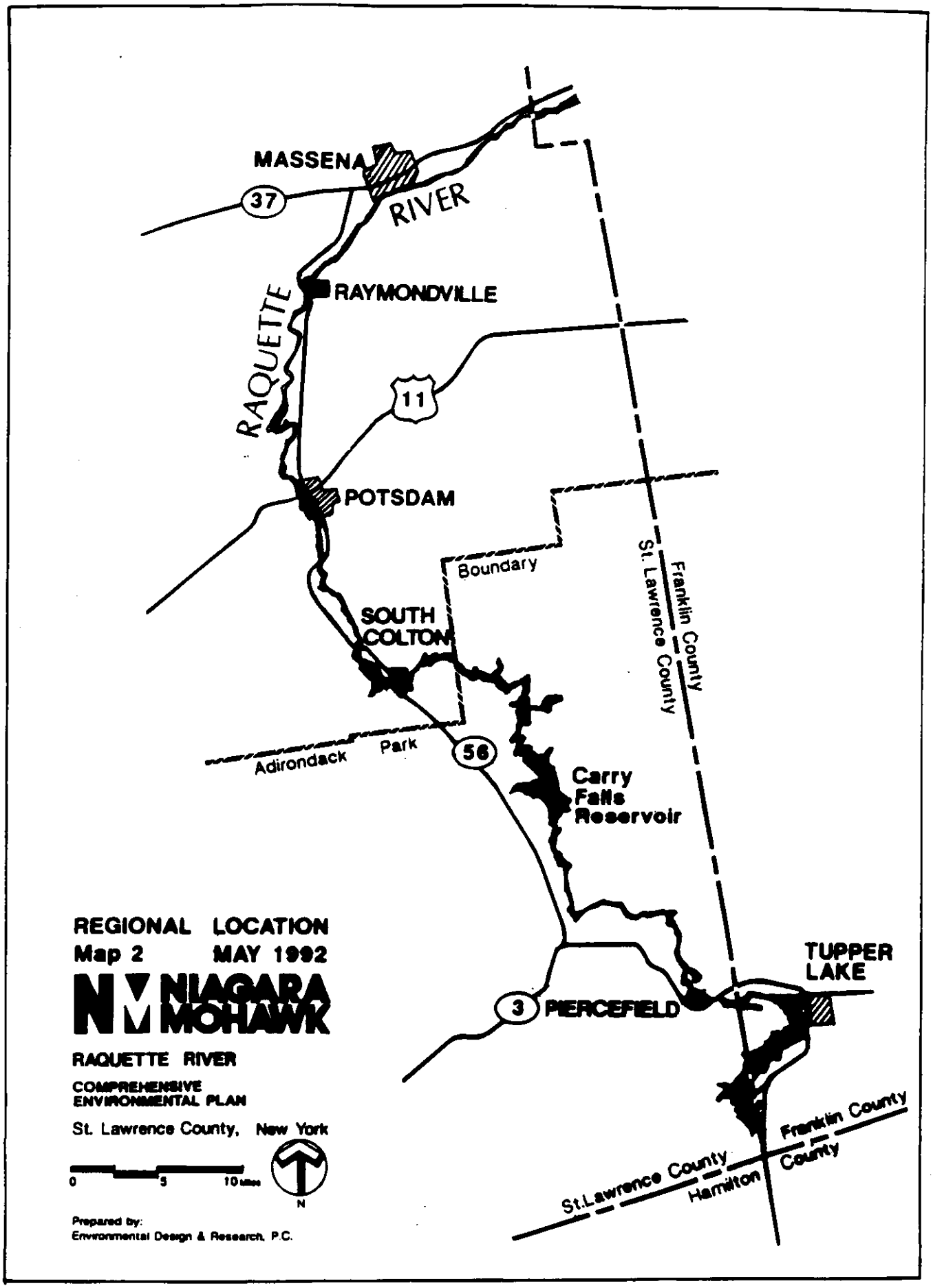
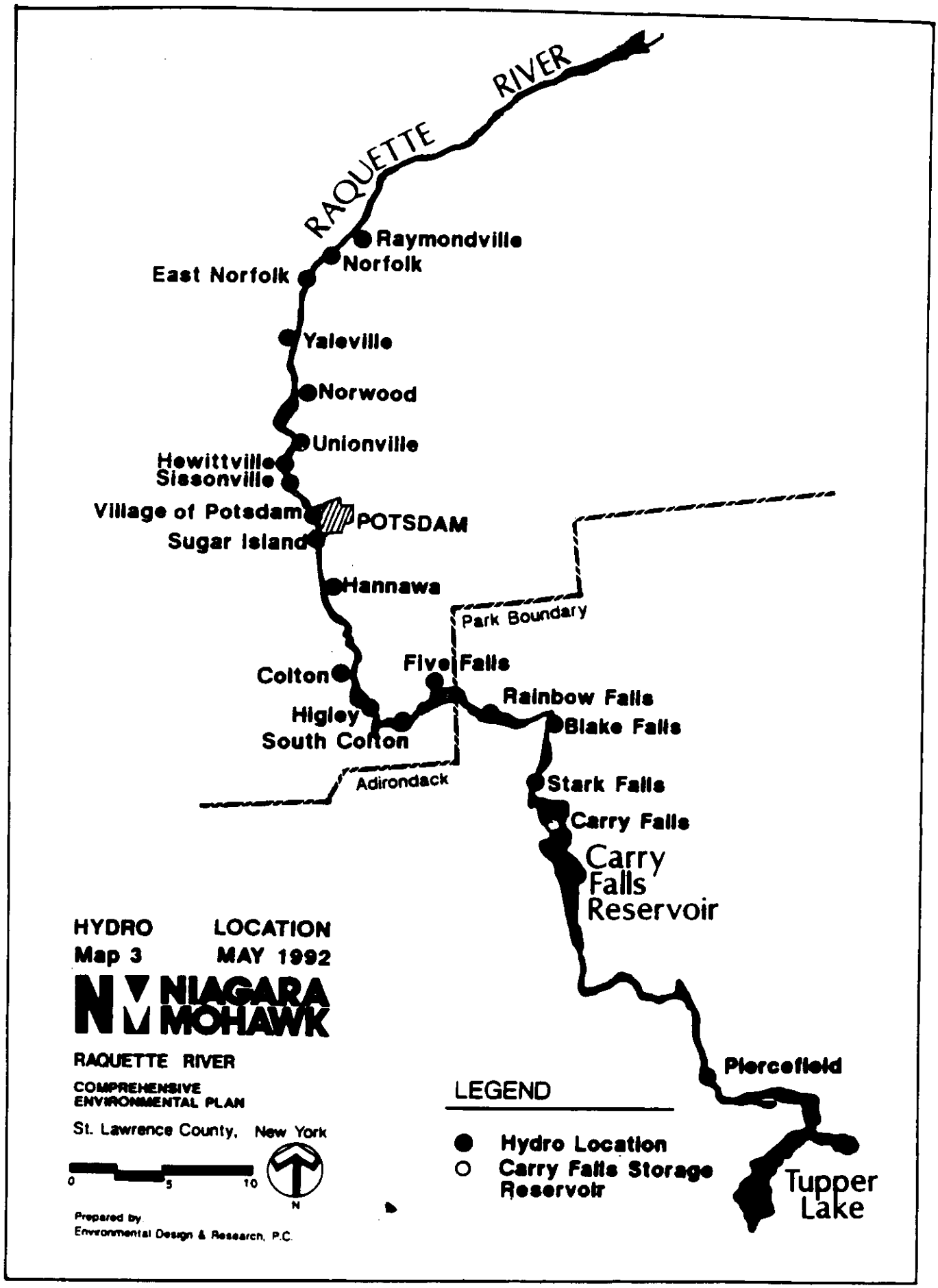

MASSENA
37
RIVER
RAQUETTE
RAYMONDVILLE
11
POTSDAM
Boundary
St. Lawrence County
Franklin County
SOUTH COLTON
Adirondack Park
56
Carry Falls Reservoir
TUPPER LAKE
3
PIERCEFIELD
St.Lawrence County
Hamilton County
Franklin County
REGIONAL LOCATION
Map 2 MAY 1992
NIAGARA MOHAWK
RAQUETTE RIVER
COMPREHENSIVE ENVIRONMENTAL PLAN
St. Lawrence County, New York
0 5 10 Miles
N
Prepared by:
Environmental Design & Research, P.C.

FIGURE 1-3


RAQUETTE RIVER
Raymondville
Norfolk
East Norfolk
Yaleville
Norwood
Unionville
Hewittville
Sissonville
Village of Potsdam
POTSDAM
Sugar Island
Hannawa
Park Boundary
Colton
Five Falls
Rainbow Falls
Higley
South Colton
Blake Falls
Adirondack
Stark Falls
Carry Falls
Carry Falls Reservoir
Piercefield
Tupper Lake
HYDRO LOCATION
Map 3 MAY 1992
NIAGARA MOHAWK
RAQUETTE RIVER
COMPREHENSIVE ENVIRONMENTAL PLAN
St. Lawrence County, New York
0 5 10
N
Prepared by
Environmental Design & Research, P.C.
LEGEND
Hydro Location
Carry Falls Storage Reservoir

2.0 GENERAL AGREEMENTS

2.1 ABBREVIATIONS AND CONVENTIONS

The following abbreviations will be used throughout this document:

ADK =	Adirondack Mountain Club
AGC =	Automatic Generation Control
AIR =	Additional Information Request
APA =	Adirondack Park Agency
AWA =	American Whitewater Affiliation
cfs =	Cubic feet per second
DOI =	Department of the Interior
FERC =	Federal Energy Regulatory Commission
FPA =	Federal Power Act
FWMA =	Fish and Wildlife Management Act
MW =	Megawatt
NEPA =	National Environmental Policy Act
NGO =	Non-Governmental Organization(s)
Niagara Mohawk, or licensee =	Niagara Mohawk Power Corporation
NPS =	National Park Service
NYRU =	New York Rivers United
NYSCC =	New York State Conservation Council
NYSDEC =	New York State Department of Environmental Conservation
NY/TU =	New York Council, Trout Unlimited
RRAC =	Raquette River Advisory Council
SHCC =	System Hydro Control Center
SLCPO =	St. Lawrence County Planning Office
State =	State of New York (or, People of the State of New York)
USFWS =	United States Fish and Wildlife Service
USGS =	United States Geological Survey
§401 WQC =	Water Quality Certification issued by NYSDEC under §401 of the federal Clean Water Act

The following conventions and definitions will be used throughout this document:

- Bypass Reach - That portion of the original river bed fully, or partially, dewatered as a result of the diversion of water.

- Elevation - Elevation as presented in this document is in feet USGS unless otherwise specified.

- Instream Flow - Any seasonal, or year round, intentional continuous release of flow into a bypass reach.

- Orientation - Description of the location of facilities and features is identified according to river right and river left. That is the direction if one is facing downstream.

2.2 EXPECTED ISSUANCE DATES OF LICENSES, EFFECTIVE DATE OF SETTLEMENT, AND IMPLEMENTATION SCHEDULE

2.2.1 EXPECTED ISSUANCE DATES OF LICENSES

A total of four new licenses will be issued, one each for the Carry Falls, Upper Raquette River, Middle Raquette River, and Lower Raquette River Hydroelectric Projects. It is the expectation and desire of the signators that FERC will issue licenses for the Middle and Lower Raquette River Hydroelectric Projects (FERC Project No's 2320 and 2330 respectively) no later than December 31, 1999, and licenses for the Carry Falls and Upper Raquette River Hydroelectric Projects (FERC Project No's 2060 and 2084 respectively) no later than January 31, 2001, as the signators to the Settlement determined the implementation dates of measures contained within this Settlement (see Section 2.2.3) based upon the expected license issuance dates referenced above.

2.2.2 EFFECTIVE DATE OF SETTLEMENT

The effective date of the Settlement for each individual project is the date the new FERC license is issued for that project. However, if a party to either this Settlement, the FERC relicensing proceeding, or NYS DEC's §401 WQC proceeding seeks rehearing on, or appeals, a particular issue in accordance with Section 10.14, then the effective date of the obligations of the Settlement for the particular issue under rehearing or appeal will be the date on which resolution of that issue by the applicable regulatory or judicial forum becomes final, rather than the date of license issuance.

2.2.3 IMPLEMENTATION SCHEDULE

Table 2-1 defines the schedule to implement enhancement measures agreed upon within this Settlement. The schedule is based upon an expected license issuance by December 31, 1999 for the Middle and Lower Raquette River Hydroelectric Projects and by January 31, 2001 for the Carry Falls and Upper Raquette River Hydroelectric Projects. Unless otherwise indicated, implementation shall occur no later than December 31st of each year indicated in Table 2-1. If control of the river is not achievable in the year indicated, thereby precluding implementation of a specific measure during that year, implementation shall be initiated once control of the river is achieved in the following year.

Except as stated above, any deferral of implementation shall be based solely upon issuance dates of the individual project licenses or any rehearing or appeal identified in Section 2.2.2. If actual license issuance of a given project occurs after the expected date of license issuance, the dates of implementation for that project may be deferred by an amount of time equal to that between the expected date of license issuance and the actual date of license issuance. In the event that rehearing or appeal of specific aspects of the Settlement results in deferral of implementation of some measures, the implementation date of those measures shall be as soon as practical, but no later than December 31 of the year after which resolution of that issue becomes final.

Site	Instream Flow	Fish Passage [2]	Fish Protection	Impoundment Fluctuations	Guide Curve [5]	Baseflow	Recreation	Whitewater
Carry Falls					June 1, 2001		by 2004	
Stark	2002	2002	2016 to 2018 [1]	2002			by 2004	
Blake	2002	2002	2016 to 2018 [1]	2002			by 2004	
Rainbow	2004	2004	2012 to 2015 [1]	2004			by 2004	
Five Falls	2003	2003	2012 to 2015 [1]	2003			by 2004	
South Colton	2003	2003	2012 to 2015 [1]	2003			by 2004	
Higley		2001	2009 to 2011 [1]	1999			by 2004	
Colton	Start of Walleye Spawning 1999 [3]	1999	2009 to 2011 [1]	1999			by 2002	2000 [4]
Hannawa	2000 [3]	2000	2005 to 2008 [1]	2000			by 2002	2000 [4]
Sugar Island	Start of Walleye Spawning 1999 [3]	1999		1999			by 2002	2000 [4]
Norwood		2001	2005 to 2008 [1]	1999			by 2003	
East Norfolk	2000 [3]	2000	2004	2000			by 2003	
Norfolk	2000 [3]	2000	2002	2000			by 2003	
Raymondville		2001	2000	1999		2000	by 2003	

General: Unless otherwise noted, implementation shall occur no later than December 31st of each year indicated. If control of the river is not achievable in the year indicated, thereby precluding implementation of a specific measure during that year, implementation shall be initiated once control of the river is achieved in the following year. Shaded areas represent enhancement measures the settlement team concluded were not necessary at, or applicable to, the sites indicated.

1 After year 2004, actual year of installation may vary. However, the licensee shall install protection within the timeframe indicated.
2 For the purpose of this table, fish passage shall mean installation of downstream fish movement and plunge pool systems.
3 The existing interim flow shall be maintained until implementation of the permanent instream flow at the time indicated.
4 Usage of whitewater budget may involve releases at this site pending determinations of the whitewater subcommittee.
5 If the Carry Falls license is issued 30 days prior to June 1, 2000, the guide curve of settlement will be implemented starting June 1, 2000, otherwise implementation shall occur starting June 1, 2001.

2.3 RUN-OF-RIVER OPERATION

For the purposes of this Settlement, run-of-river operation is defined as the operation of a single unit, or multi-unit development, which is based on an active storage volume of zero cubic feet at all times; therefore, the instantaneous sum of all releases will equal the instantaneous inflow to the impoundment to the extent practicable.

2.4 RUN-OF-RIVER WITH PONDAGE OPERATION

A run-of-river with pondage operational mode means that a development containing multiple units utilizes the multiple units in conjunction with normal impoundment fluctuations such that outflow fluctuates above and below the instantaneous inflow level at rates which correspond to the most efficient sequence of unit loading. At a minimum, one unit always operates, or water is spilled.

2.5 PEAKING, LOAD FOLLOWING, AND AGC OPERATION

2.5.1 VARIOUS STORAGE AND RELEASE OPERATIONAL MODES

A store-and-release operational mode may be of several different varieties, the common attribute of which is that the mode of operation of the development does not qualify as a run-of-river, or run-of-river with pondage operation.

- Store-and-Release Pulsing

In a store-and-release pulsing mode of operation, a single unit development utilizes normal impoundment fluctuations, but essentially regulates outflow in an on/off cyclic manner which varies in response to the level of instantaneous flow. Operation is in response to inflow and normal impoundment fluctuations and does not necessarily correspond to system peak electric power demands.

- Store-and-Release Peaking

In a store-and-release peaking mode of operation, a single unit development operates in a concentrated time frame corresponding to system peak electric power demand periods, usually during weekday hours. Operation is curtailed during off-peak, non-generating hours or when normal impoundment fluctuation limits have been reached.

- Store-and-Release Load Following

In a store-and-release load following mode of operation, a single unit development operates in response to system load demands. In this mode, desired hourly megawatt (MW) targets, for developments capable of load following, are scheduled by staff of the System Hydro Control Center (SHCC). The load following operation may result in an instantaneous MW output above or below each hourly target in response to system load demands, with the objective of being at, or near, the scheduled hourly MW target and adhering to applicable impoundment fluctuation constraints.

- Re-regulation

In a re-regulating mode of operation, a single unit, or multi-unit development utilizes normal impoundment fluctuations and the appropriate sequence of units to re-regulate an upstream pulsing, peaking, or load following operation into a steadier round-the-clock flow.

2.5.2 PEAKING, LOAD FOLLOWING AND AGC OPERATION CONTINUANCE

The Carry Falls Project and Upper Raquette River Hydroelectric Project are operated as a system. The SHCC in Watertown, NY currently operates these two projects remotely under 24-hour surveillance utilizing the Automatic Generation Control system (AGC) to coordinate operations and monitor interactions among the developments. In addition to the SHCC, local licensee staff are available on call to manually operate any plant in the event of unusual conditions, emergencies, or for maintenance purposes.

Under daily operation, staff of the SHCC makes determinations of MW output from the Upper Raquette River Hydroelectric Project needed to satisfy system load demands. These determinations consist of hourly megawatt targets and logic decisions as to which development should/can operate and for how long while simultaneously maximizing water usage through all projects. The AGC is the means by which staff of the SHCC achieve the MW targets.

The SHCC had historically called for Carry Falls to provide seasonal and daily flow regulation to facilitate the store-and-release peaking operation of the developments of the Upper Raquette River Hydroelectric Project according to the six major goals described below. The overarching objective of the SHCC is to maximize overall efficiency of water usage through the projects. As such, the priority of the six major goals is constantly shifting in order to best meet the overarching objective.

- Maximize overall efficiency of water usage through the projects.
- Control outflow levels from the Carry Falls Project (to the degree possible) such that actual daily and seasonal reservoir elevations emulate the reservoir guide curve to the extent that varying inflow due to runoff allows.

- Control outflow levels from the Carry Falls Project (to the degree possible) such that the developments of the Upper Raquette River Hydroelectric Project can operate at, or near, their efficient flow of 2,700 cfs during pre-scheduled hours to provide in excess of 100 MW of capacity in response to system load demands for each hour.

- Control outflow levels from the Carry Falls Project (to the degree possible) to ensure a total daily flow volume which, when re-regulated by the Higley Development of the Middle Raquette River Hydroelectric Project, corresponds to an average daily outflow which matches either the maximum hydraulic capacity of the Colton Development (1,500 cfs), or one of the efficient operating points associated with a combination of one, two or three unit operation at the Colton Development.

- Operate the Higley Development in a re-regulating mode so as to maximize the extent to which Higley outflow can match either the maximum hydraulic capacity of the Colton Development or one of the efficient operating points associated with a combination of one, two, or three unit operation at the Colton Development.

- Control operation at Carry Falls and each development of the Upper Raquette River Hydroelectric Project to maintain impoundment levels within drawdown limits outlined in Section 4.0.

Nothing in this settlement shall negate or preclude the licensee's ability to continue the use of the AGC system to perform the load following function. However, the AGC system shall be operated to conform to the instream flow requirements set forth in Section 3.0, the normal impoundment fluctuations set forth in Section 4.0, and the guide curve of settlement set forth in Section 5.0.

2.6 FLOWS

The licensee will provide those base flows and instream flows as set forth in Sections 3.0 and 5.0.

2.7 FLOW RELEASE STRUCTURES

Flow release structures will be designed to minimize adverse impacts to fish moving downstream and be cost effective and reasonable. Final details of designs, including final locations of fish protection and conveyance measures (e.g., plunge pools, piping, etc.), will be based on field inspections and professional judgment of the licensee, the USFWS, and NYSDEC. Installation will be undertaken by the licensee in accordance with the schedule and substantive commitments set forth in Sections 3.0 and 6.0.

2.8 UPSTREAM FISH PASSAGE

Consistent with existing fishery management objectives, no upstream fish passage measures will be required at this time, although the new FERC licenses for each of the Raquette River Projects will include the standard license article reserving the ability to require such fish passage in the future.

2.9 DOWNSTREAM FISH PASSAGE

Consistent with existing fishery management objectives and Section 2.7 provisions relating to "fish friendly" flow release structures, no downstream fish passage structures will be required, although measures to facilitate downstream fish movement will be implemented at all sites (see Section 6.0). The new FERC licenses for each of the Raquette River Projects will include the standard license article reserving the ability to require such fish passage in the future.

2.10 FISHERIES MANAGEMENT

No effectiveness studies of fish exclusion, protection or movement will be required as part of this Settlement. However, should fishery management goals, or other needs change during the term of the licenses, the authority of the Secretary of the DOI to prescribe fishways pursuant to Section 18 of the FPA is reserved. Should the goals or needs change during the term(s) of the license(s), based on substantial evidence, provision of notice, and opportunity to be heard, the parties hereto will fully cooperate in investigating and evaluating the means, measures, costs, and benefits that are appropriate to adequately address such changes. Nothing herein shall be construed as a waiver of FERC and/or licensee practices and/or rights/responsibilities to not make license changes unilaterally and without affording notice and opportunity for hearing.

2.11 ENDANGERED SPECIES

Continued operation of the projects included as part of, and pursuant to, this settlement will not affect Federal or State listed threatened or endangered species issues for the Raquette River Projects.

2.12 HISTORIC PRESERVATION

Continued operation of the projects included as part of, and pursuant to, this settlement will not affect historic preservation issues for the Raquette River Projects.

2.13 ACCESS

Any access granted or acquired for recreational purposes in the context of this Settlement will be for general public use.

2.14 RECREATION FACILITIES AND CONSULTATION

Existing recreation facilities at the Raquette River Projects will be retained. Existing and additional recreational facilities specified in Section 7.0 represent all agreed-upon facilities for the Carry Falls, Upper Raquette, Middle Raquette, and Lower Raquette River Hydroelectric Projects. Existing and additional recreational facilities specified in Section 7.0 are generally consistent with, but supersede, proposals contained in the new FERC license applications for Middle and Lower Raquette River Hydroelectric Projects, and/or AIR responses filed with FERC for the Middle and Lower Raquette River Hydroelectric Projects (see Section 2.16.2). Existing and additional recreational facilities will be provided as specified in Section 7.0 and in accordance with the schedule set forth in Table 2-1. Existing and additional recreational facilities, and access thereto, are, or will be, located on lands currently owned by the licensee, or in the public way, unless otherwise noted. A plan to implement the existing and additional recreational facilities will be developed in consultation with individual members of the RRAC (see Appendix 2).

2.15 CARTOP BOAT

For the purposes of this Settlement, a cartop boat is one which requires neither a ramp nor trailer to launch and retrieve.

2.16 PROPOSALS WITHDRAWN

2.16.1 GENERATING FACILITIES

Any licensee proposal to install new generating units at the following Raquette River Projects' Developments is hereby withdrawn as no longer being economic: Colton, Hannawa, Sugar Island, Norwood, East Norfolk, Norfolk, and Raymondville as detailed in Exhibits A and B of the license applications for both the Middle and Lower Raquette River Hydroelectric Projects No.'s 2320 and 2330. However, the redevelopment of the Higley Development remains as a viable proposal of the licensee as described in Exhibits A and B of the license application for the Middle Raquette River Hydroelectric Project No. 2320.

2.16.2 RECREATIONAL FACILITIES

Licensee proposals to implement the following recreational facilities are hereby withdrawn (see Sections 2.14 and 7.0).

Higley - The fishing platform proposed at the new powerhouse, as detailed in Section E.5(iv)A.3.a. of the Middle Raquette River Hydroelectric Project No. 2320 license application, is withdrawn.

Colton - The car-top boat launch and day-use area and primitive campsites in the vicinity of Browns Bridge (located at the upper Hannawa impoundment), as detailed in Section E.5(iv)A.3.b. of the Middle Raquette River Hydroelectric Project No. 2320 license application, is withdrawn.

Sugar Island - The improvement of the existing car-top boat launch located along the east side of the river in the Village of Potsdam, is withdrawn. This facility was to be improved in cooperation with the State University of New York College at Potsdam, which currently maintains a limited boat launch at this site. The proposal included parking for 12 cars, a gravel surface, timber guard rails, and signage, as detailed in Section E.5(iv)A.3.c. of the Middle Raquette River Hydroelectric Project No. 2320 license application.

East Norfolk - The establishment of a car-top boat launch in the vicinity of the East Norfolk dam is withdrawn. The proposal included a gravel roadway, stone-dust take out, wood-chip fishing access site, and vehicular pull-off area, timber guardrail, and signage, as detailed in Section E.5(iv)A.3.b. of the Lower Raquette River Hydroelectric Project No. 2330 license application.

Unmanned Recreational Facilities - The provision of trash facilities at unmanned recreational facilities is withdrawn, and these sites will be operated under a "carry in, carry out" policy. (The McNeil and Parmenter campsites are staffed and will retain the existing level of on-site trash facilities.)

2.17 PROJECT BOUNDARY COMMITMENTS

The licensee agrees to adjust project recreational facilities and provide an access point thereto such that said facilities, and access, fall on project lands owned by the licensee or, in the event such facilities and access are not now so located, to amend the project boundary so that said facilities and access fall on project lands owned by the licensee, unless otherwise indicated in Section 9.0.

2.18 LAND MANAGEMENT COMMITMENTS

The licensee agrees to those land management commitments set forth in Section 9.0.

2.19 TERM OF LICENSES

To facilitate future coordinated river basin review for the Raquette River Projects, the common new license expiration date for the Raquette River Projects should be set by FERC at December 31, 2033.

2.20 FERC LICENSE ARTICLE LANGUAGE

It is the expectation and desire of the signators that this Settlement shall be used as a primary source by FERC in the generation of the FERC license ultimately issued for each of the Raquette River Projects contained as part of this Settlement (see Sections 1.1 and 1.4).

- It is the expectation and desire of the signators that the general definitions, conditions, agreements, provisions, and schedules contained in Section 1 (Introduction), Section 2.0 (General Agreements), and Sections 10.3 through 10.13 (Miscellaneous) will be used by FERC, as applicable and without substantive modification, in the generation of a FERC license for each of the Raquette River Projects addressed by this Settlement.

- It is the expectation and desire of the signators that all terms and conditions contained in Sections 3.0 through 8.0 will be used by FERC, without substantive modification, in the generation of FERC license article language for each of the Raquette River Projects addressed by this Settlement.

- It is the expectation and desire of the signators that only the provisions of sub-section 9.5 (Lands Subject to FERC Boundary Revision) of Section 9.0 (Lands), which pertains to land issues directly associated with the Projects and their boundaries (and therefore under FERC jurisdiction), will be reflected in the applicable FERC license and § 401 WQC issued for any of the Raquette River Projects addressed by this Settlement.

- It is the expectation and desire of the signators that the mechanisms for the formation and administration of the Raquette River Advisory Council and Raquette River Fund (identified in Sections 10.1 and 10.2, and detailed in Appendix 2) will not be made part of the applicable FERC licenses nor the §401 WQC's issued for the any of the Raquette River Projects addressed by this Settlement.

- It is the expectation and desire of the signators that the FERC will generate license article language allowing for the submittal of all necessary "as built" drawings and/or documentation to supplement and/or supercede the Middle and Lower Raquette River Projects No.'s 2320 and 2330 license applications filed in 1991 subsequent to the issuance of new licenses for these two projects.

3.0. INSTREAM FLOWS

3.1 INTRODUCTION

The Carry Falls and Upper Raquette River Hydroelectric Projects are being relicensed under a collaborative and accelerated process. Studies to support this relicensing effort were conducted between 1995 and 1997. An instream flow study, *Upper Raquette River Hydroelectric Project Delphi Instream Flow Study* (ND&T/IA March 1997), (Delphi Instream Flow Study) was conducted in the summer of 1996 to evaluate instream flow needs for the five bypass reaches associated with the Upper Raquette River Hydroelectric Project. This study formed the basis for the flows ultimately agreed upon within this Settlement for the Upper Raquette River Hydroelectric Project. The study was scoped, executed, and finalized as a collaborative effort involving experts of the licensee, resource agencies, and NGOs. The study was performed by a participating team representing the NYSDEC, USFWS, APA, NYRU, and the licensee as well as contributing members representing NYSCC, ADK, and the SLCPO. The goal of the study was to develop a comprehensive, biologically-based flow recommendation that incorporates and balances all relevant flow-related environmental values for each bypass reach.

A vast array of studies has been conducted in support of the relicensing of the Middle and Lower Raquette River Hydroelectric Projects - both Class of 1993 projects. These include studies conducted prior to filing of the license applications between 1986 and 1991, as well as subsequent evaluations as part of 2nd and 3rd Stage Consultation and the Settlement process. This array of studies and evaluations was used in determining flows ultimately agreed upon within this Settlement for the Middle and Lower Raquette River Hydroelectric Projects. Studies conducted by the licensee in support of the Carry Falls, Upper Raquette, Middle Raquette, and Lower Raquette River Hydroelectric Projects are listed in Appendix 1.

3.2 GENERAL AGREEMENTS

Thirteen hydroelectric developments and one storage reservoir make up the four projects within this Settlement. The licensee shall provide the instream flows at ten hydroelectric developments as specified in Section 3.3. Instream flows shall be phased in as specified in Table 2-1 and Section 3.4. The remaining three developments will have 20 cfs fish conveyance flows (see Section 6.0).

3.2.1 WALLEYE SPAWNING SEASON

Many of the flows included as part of this Settlement have one, or more, seasonal components. The seasonal component encountered most often is that of a release to accommodate spawning between April and June - particularly in the early spring for walleye. For the purpose of establishing the duration of flows designated for walleye spawning season for the projects on the Raquette River as referenced in Section 3.3, the following criteria shall be used unless modified by mutual agreement between the licensee, NYSDEC, and the USFWS.

3.2.1.1 Start of Walleye Spawning Season

Walleye spawning season will start when water temperature at South Colton reaches 4 degrees Celsius (39.2° F) for 4 consecutive days after March 15th of each year.

3.2.1.2 End of Walleye Spawning Season

Walleye spawning season will end 30 days after water temperature at South Colton has reached 10 degrees Celsius (50° F) for 4 consecutive days.

3.2.1.3 Location of Temperature Monitoring

The start and end of walleye spawning season at all developments shall be determined via water temperature readings taken at the South Colton Development of the Upper Raquette River Hydroelectric Project. Water temperature readings shall be taken in the vicinity of the tailrace of the South Colton Development.

3.2.2 FLOW TOLERANCES

All instream flows defined in Section 3.3 are considered nominal flows. That is, it is recognized that the actual release at any given time may be slightly above or below the value indicated. The degree to which a flow will be above or below the value indicated is a function of headpond elevation as a result of normal impoundment fluctuations (see Section 4.0). The licensee shall derive appropriate gate settings for the provision of instream flows at each of the ten developments, based upon the midpoint of the normal impoundment fluctuation of each development. For example, if the normal impoundment fluctuation is 1.0 foot, and the instream flow is 45 cfs, the gate setting to provide 45 cfs shall be based upon a drawdown of 0.5 feet. The instream flow (and the range of nominal flows, in parentheses) is provided within each table in Section 3.3.

3.2.3 GENERAL JUSTIFICATION

The bypass reach flows were designed to restore dewatered reaches. The largest reaches and those with the best habitats were given priority, with flows chosen which were closer to the optimum habitats for the target species. In addition, these reaches received the highest priority on the implementation schedule. These instream flows will complement annual spring spillage events which result in larger flows in the bypass reaches.

3.3 SPECIFIC TERMS OF SETTLEMENT

3.3.1 CARRY FALLS PROJECT No. 2060

The Carry Falls Project is a storage reservoir with no bypass reach. As such, the licensee shall not be required to provide any instream flow at the Carry Falls Project.

3.3.2 UPPER RAQUETTE RIVER HYDROELECTRIC PROJECT No. 2084

3.3.2.1 Stark Development

- Flow Levels

The licensee shall maintain an instream flow of 45 cfs from the stoplog section of the dam located near the left shore. This flow shall be increased to 90 cfs when releases, of a duration longer than 24 hours, are made through the taintor gates located adjacent to the stoplog section. Prior to closure of the taintor gates, the licensee shall establish the 90 cfs instream flow through the stoplog section of the dam. This flow shall be maintained for an additional 24 hours following closure of the taintor gates. At the end of this 24 hour period, the licensee shall revert back to the 45 cfs instream flow.

Table 3-1
Stark Development
Instream Flow Schedule

Flow Magnitude	Annual Start Date	Annual End Date
45 cfs (42 - 48)	January 1	December 31
90 cfs (84 - 96)	Immediately after any taintor gate release of 24 hours	24 hours after end of any taintor gate release

- Justification

The signators concluded that the 45 cfs flow shall be maintained for the enhancement and/or protection of forage fish and benthic invertebrate production, riparian wetland vegetation, aesthetics, spawning for fish from the Blake impoundment, fish movement, fishing opportunities, and water quality. The signators concluded that the 90 cfs flow shall be maintained to reduce the potential for stranding fish.

- Other Considerations

The Delphi Instream Flow Study indicated that special consideration should be given to a habitat segment labeled segment 12A (see Figure 3-1 at the end of this section). In this segment, riparian wetland values may be compromised at the 45 cfs level. Flow into this habitat segment is limited by a boulder berm at the head of the segment. The boulder berm was placed in the river prior to the existence of the project, presumably to facilitate historic log drives. The licensee shall make a onetime attempt to minimize flow through the berm via the movement (by hand) of existing material. This work shall be conducted commensurate with the implementation of the instream flow as specified in Table 2-1. Subsequent to this onetime attempt, the licensee shall not be required to make additional attempts, for any reason, to restrict flow through the berm.

3.3.2.2 Blake Development

- Flow Levels

The licensee shall maintain an instream flow of 55 cfs from the stoplog section of the dam located near the left shore. This flow shall be increased to 120 cfs at the start of walleye spawning season. The 120 cfs flow will end on June 30 of each year. The licensee shall resume the 55 cfs instream flow on July 1.

Table 3-2
Blake Development
Instream Flow Schedule

Flow Magnitude	Annual Start Date	Annual End Date
55 cfs (52 - 58)	January 1	Start of walleye spawning season
120 cfs (112 - 128)	Start of walleye spawning season	June 30
55 cfs (52 - 58)	July 1	December 31

- Justification

The signators concluded that the 55 cfs and 120 cfs instream flow levels shall be maintained for the enhancement and/or protection of forage fish and benthic invertebrate production, riparian wetland vegetation, fish spawning and incubation, fish movement, fish movement into/out of Dead Creek, and provision of brook trout habitat during cooler periods.

- Other Considerations

The Delphi Instream Flow Study indicated the existence of a large gravel/cobble bar on the left bank near habitat segments 1, 2, and 3 (see Figure 3-2 at the end of this section). This gravel/cobble bar is not wetted at the 55 cfs flow level, and only begins to be wetted at flows exceeding 250 cfs. At the time of the construction of the downstream fish movement facilities (see Section 6.8), the licensee shall make habitat modifications in this area by moving the gravel/cobble material such that it is wetted and useable at the 55 cfs instream flow level. Upon completing this work, the licensee shall not be responsible for keeping the gravel/cobble material at this location, or maintaining the initial volume of gravel/cobble material placed at this location.

3.3.2.3 Rainbow Development

- Flow Levels

The licensee shall maintain an instream flow of 20 cfs from the stoplog section of the dam located near the left shore. This flow shall be maintained year-round.

Table 3.3
Rainbow Development
Instream Flow Schedule

Flow Magnitude	Annual Start Date	Annual End Date
20 cfs (19 - 21)	January 1	December 31

- Justification

The signators concluded that the 20 cfs instream flow shall be maintained for the enhancement and/or protection of benthic invertebrate habitat, fish movement, recreational access, aesthetics, water quality, and safety concerns.

3.3.2.4 Five Falls Development

- Flow Levels

The licensee shall maintain an instream flow of 50 cfs from the stoplog section of the dam located near the left shore. This flow shall be increased to 145 cfs during walleye spawning season. The licensee shall resume the 50 cfs instream flow at the end of walleye spawning season.

Table 3-4
Five Falls Development
Instream Flow Schedule

Flow Magnitude	Annual Start Date	Annual End Date
50 cfs (43 - 57)	January 1	Start of walleye spawning season
145 cfs (125 - 165)	Start of walleye spawning season	End of walleye spawning season
50 cfs (43 - 57)	End of walleye spawning season	December 31

- Justification

The signators concluded that the 50 cfs flow shall be maintained for the enhancement and/or protection of forage fish and benthic invertebrate production as well as for fish movement. The signators concluded that the 145 cfs flow shall be maintained to allow for walleye movement to, and usage of, appropriate spawning habitat, as well as to provide additional protection to spawning walleye.

3.3.2.5 South Colton Development

- Flow Levels

The licensee shall maintain an instream flow of 20 cfs over the visible portion of the falls. This flow can be achieved by releasing 60 cfs from the stoplog section of the dam located near the left shore, or by releasing a minimum of 20 cfs from this same location and modifying the channel to divert at least 20 cfs of the minimum flow over the visible portion of the falls. This flow shall be maintained year round.

Table 3-4
South Colton Development
Instream Flow Schedule

Flow Magnitude	Annual Start Date	Annual End Date
20 cfs with channel modifications (17 - 23)	January 1	December 31
60 cfs without channel modifications (52 - 68)	January 1	December 31

- Justification

The signators concluded that the 20 cfs instream flow shall be maintained for the enhancement and/or protection of aesthetics, safety considerations, and fish movement. Since the reach is primarily ledge rock, little additional fish or invertebrate habitat is provided at higher flows.

- Other Considerations

The Delphi Instream Flow Study indicated that, in addition to providing downstream fish movement, a second objective of the South Colton instream flow is to enhance aesthetic qualities of the visible portion of the falls near the downstream end of the bypass reach at habitat segment 13 (see Figure 3-3 at the end of this section). The study indicated that the appropriate level of flow over the visible portion of the falls (habitat segment 13) should be 20 cfs. Test releases indicated that a 60 cfs release with no channel modifications will result in 20 cfs passing over this visible portion of the falls. Conversely, channel modifications will also result in 20 cfs passing this desired point. It is the licensee's discretion as to whether a 60 cfs release with no channel modifications, or a 20 cfs release with channel modifications is appropriate. However, the licensee shall provide 20 cfs over the visible portion of the falls.

3.3.3 MIDDLE RAQUETTE RIVER HYDROELECTRIC PROJECT No. 2320

3.3.3.1 Higley Development

- Flow Levels

The licensee shall not be required to provide an instream flow in the bypass reach of the Higley Development.

- Justification

The signators concluded that due to the shortness and backwatered nature of the bypass reach, an instream flow for aquatic purposes is not needed. However, see Section 6.3.3.1 for discussion on fish bypass flows.

3.3.3.2 Colton Development

- Flow Levels

The licensee shall maintain the following instream flows, for the duration specified, from the Colton Dam (see Section 6.3.3.1 for discussion of release structures).

Table 3-6
Colton Development
Instream Flow Schedule

Flow Magnitude	Annual Start Date	Annual End Date
110 cfs (100 - 120)	January 1	Start of Walleye Spawning Season
240 cfs with spring spillage (216 - 264) 200 cfs without spring spillage (180 - 220)	Start of Walleye Spawning Season	End of Walleye Spawning Season
200 cfs (180 - 220)	End of Walleye Spawning Season	June 30
125 cfs (113 - 138)	July 1	August 15
90 cfs (81 - 99)	August 16	September 15
125 cfs (113 - 138)	September 16	October 31
110 cfs (100 - 120)	November 1	December 31

- Justification

The nearly 3 mile long Colton bypass reach is the longest and one of the most complex bypass reaches on the Raquette River (and in New York). The management goal is to recreate a complete riverine ecosystem within the bypass reach. The instream flow schedule reflects this level of complexity through the variations over the course of the year, which are intended to follow natural hydrologic trends. The signators concluded that this flow schedule shall be provided to enhance and/or protect the recovery of a riverine ecosystem within the bypass reach, forage fish and benthic invertebrate production, fish movement, wetland and riparian resources, aesthetics and safety, fish spawning and incubation, and water quality. The individual seasonal flows balance all of these concerns and address the varying habitats and recreational uses in the upper, middle, and lower sections of the reach.

- Other Considerations

The walleye spawning flow will be maintained at 240 cfs in years when spring spillage into the bypass reach occurs. This is to ensure that access to habitat available at spillage flows of 240 cfs (or greater) is not eliminated when spillage reduces to levels below 240 cfs. In years when no spring spillage occurs (which are expected to be rare), a 200 cfs flow will be implemented at the beginning of walleye

spawning season and last through June 30. The Colton bypass reach has also been selected as a site for whitewater releases. Issues associated with ramping, flow magnitudes, duration, and schedule are discussed in Section 8.0.

- Interim Flows

Interim flows have been instituted at the Colton Development since 1996. The licensee shall continue to provide interim flows of 125 cfs (ice out to September 15th), and 75 cfs (September 16th to ice out) until permanent instream flows are implemented as defined in Table 2-1. Reduction of interim flows below these levels will be allowable if caused by operational constraints such as icing or release mechanism problems (see Section 3.4.1).

3.3.3.3 Hannawa Development

- Flow Levels

The licensee shall maintain the following instream flows, for the duration indicated, from the stoplog section of the dam located near the right bank.

Table 3-7
Hannawa Development
Instream Flow Schedule

Flow Magnitude	Annual Start Date	Annual End Date
50 cfs (48 - 52)	January 1	Start of Walleye Spawning Season
90 cfs (87 - 93)	Start of Walleye Spawning Season	June 30
65 cfs (63 - 67)	July 1	October 31
50 cfs (48 - 52)	October 31	December 31

- Justification

These flow levels reflect variations over the course of the year and are intended to follow natural hydrologic trends. The signators concluded that this flow schedule shall be provided to enhance and/or protect forage fish and benthic invertebrate production, fish movement, wetland and riparian resources, aesthetics, and safety.

- Other Considerations

The Hannawa bypass reach may be subject to whitewater releases. Issues associated with ramping, flow magnitudes, duration, and schedule are discussed in Section 8.0.

- Interim Flows

Interim flows have been instituted at the Hannawa Development since 1996. The licensee shall continue to provide interim flows of 50 cfs (ice out to September 15th), and 35 cfs (September 16th to ice out) until permanent instream flows are implemented as defined in Table 2-1. Reduction of interim flows below these levels will be allowable if caused by operational constraints such as icing or release mechanism problems (see Section 3.4.1).

3.3.3.4 Sugar Island Development

- Flow Levels

The licensee shall maintain the following instream flows for the duration indicated from a minimum flow pipe installed on the powerhouse pipeline just downstream of the pipeline intake.

Table 3-8
Sugar Island Development
Instream Flow Schedule

Flow Magnitude	Annual Start Date	Annual End Date
300 cfs (282 - 318)	January 1	Start of Walleye Spawning Season
400 cfs (376 - 424)	Start of Walleye Spawning Season	June 30
300 cfs (282 - 318)	July 1	December 31

- Justification

The Sugar Island bypass reach is the second longest, and most complex, bypass reach on the Raquette River. The bypass reach is characterized by numerous braided channels, bars, islands, and rock gardens. The primary objective is to recreate a complete riverine ecosystem within the bypass reach. Due to the numerous channels and the tendency for the water to spread out, the signators concluded that this bypass reach warrants an instream flow significantly greater than those provided on the remainder of the river. This flow schedule shall be provided to enhance and/or protect forage fish and benthic invertebrate production, fish movement, seasonal brook trout habitat, and to provide recreational opportunities.

- Other Considerations

The Sugar Island bypass reach may be subject to whitewater releases. Issues associated with ramping, flow magnitudes, duration, and schedule are discussed in Section 8.0.

- Interim Flows

Interim flows have been instituted at the Sugar Island Development since 1996. The licensee shall continue to provide interim flows of 125 cfs (year round) until permanent instream flows are implemented as defined in Table 2-1. Reduction of interim flows below these levels will be allowable if caused by operational constraints such as icing or release mechanism problems (see Section 3.4.1).

3.3.4 LOWER RAQUETTE RIVER HYDROELECTRIC PROJECT No. 2330

3.3.4.1 Norwood Development

- Flow Levels

The licensee shall not be required to provide an instream flow in the bypass reach of the Norwood Development.

- Justification

The signators concluded that due to the shortness and backwatered nature of the bypass reach, an instream flow for aquatic purposes is not needed. However, see Section 6.3.4.1 for discussion on fish bypass flows.

3.3.4.2 East Norfolk Development

- Flow Levels

The licensee shall maintain an instream flow of 75 cfs from the stoplog section of the dam near the left shore and intake. This flow shall be maintained year-round.

Table 3-9
East Norfolk Development
Instream Flow Schedule

Flow Magnitude	Annual Start Date	Annual End Date
75 cfs (65 - 85)	January 1	December 31

- Justification

The signators concluded that this flow shall be provided to enhance and/or protect forage fish and benthic invertebrate production, fish movement, and continuity of flow on the lower river. The predominantly ledge rock habitat and wide channel would require extremely high flows for additional habitat gains.

- Interim Flows

An interim flow equal to the specified instream flow has been instituted at the East Norfolk Development since 1996. The licensee shall continue the provision of the 75 cfs interim flow (year round) until the permanent instream flow (also 75 cfs) is scheduled for implementation as defined in Table 2-1. Reduction of the interim flow below this level will be allowable if caused by operational constraints such as icing or release mechanism problems (see Section 3.4.1).

3.3.4.3 Norfolk Development

- Flow Levels

The licensee shall maintain a total instream flow of 75 cfs below the confluence of the trash sluice channel and the bypass reach (main channel of the Raquette River). A release of 37.5 cfs shall be maintained from the stoplog section of the dam near the right shore and headgates at the upstream end of the bypass reach. A second release of 37.5 cfs shall be maintained in the trash sluice channel which enters the bypass reach at approximately the halfway point (see Section 6.3.4.1 for further discussion on the trash sluice channel). These flows shall be maintained year-round.

Table 3-18
Norfolk Development
Instream Flow Schedule

Flow Magnitude	Annual Start Date	Annual End Date
37.5 cfs from stoplog section at the dam (35 - 40)	January 1	December 31
37.5 cfs from the trash sluice return channel (35 - 40)	January 1	December 31

- Justification

The signators concluded that this flow shall be provided to enhance and/or protect forage fish and benthic invertebrate production, fish movement, and continuity of flow on the lower river. The split flow is designed to improve downstream fish movement while maintaining the full bypass flow through the best habitat. Substantially higher flow would be required to improve habitat in this bypass reach.

- Interim Flows

An interim flow equal to the total specified instream flow has been instituted at the Norfolk Development since 1996. However, the entire 75 cfs interim flow is released at the upstream end of the bypass reach. The licensee shall continue to provide the entire 75 cfs interim flow (year round) at the upstream end of the bypass reach until the permanent instream flow (also 75 cfs) is scheduled for implementation as defined in Table 2-1, at which time the split flow procedure shall also be implemented. Reduction of the interim flow below this level will be allowable if caused by operational constraints such as icing or release mechanism problems (see Section 3.4.1).

3.3.4.4 Raymondville Development

- Flow Levels

The licensee shall not be required to provide an instream flow in the bypass reach of the Raymondville Development.

- Justification

The signators concluded that due to the shortness and ledge rock substrate of the bypass reach, an instream flow for aquatic purposes is not needed. However, see Section 5.3.3 for discussion on the Raymondville baseflow and Section 6.3.4.1 for discussion on fish bypass flows.

3.4 EXCEPTIONS AND MONITORING

3.4.1 EXCEPTIONS

Allowances have been made to accommodate circumstances which necessitate the curtailment and/or suspension of any and/or all of the instream flows at the ten developments for which they are being provided. Reasons for same may include, but are not necessarily limited to, the following:

- Maintenance, repair, or reconstruction of project facilities at any hydroelectric project and/or water retaining structure on the Raquette River.

- Maintenance, repair, or reconstruction of nonproject facilities such as roads, bridges, or other structures in, or adjacent to, the river.

- Any emergency situations related to dam safety, human life and property, or rescue.

- "Dry" or "Drought" conditions experienced within the watershed (see Section 5.3.3).

Instream flows will be curtailed or suspended for the minimum duration necessary. Flows will be restored as soon as possible after the circumstance for which they have been curtailed or suspended is completed. The licensee may curtail or suspend any and/or all of the instream flows if either of the following criteria have been met:

- The Licensee must consult with appropriate NYSDEC staff in Watertown, NY regarding the need and approval to curtail or suspend any and/or all instream flows. It will be the responsibility of the NYSDEC to notify the USFWS (and the APA as appropriate) of the request. Documentation of the consultation with NYSDEC officials must describe the need for the curtailment and/or suspension, and specify the requested duration of the curtailment and/or suspension.

- If an emergency situation exists where consultation will only slow down or impair the Licensees' ability to address immediate dangers related to dam safety, human life and property, or rescue efforts, consultation with the NYSDEC will not be deemed necessary. However, the NYSDEC will be notified as soon as possible of the emergency situation following the curtailment and/or suspension of any and/or all instream flows.

3.4.2 MONITORING

The licensee shall monitor the instream flow provided at each development. Data regarding headpond elevation and applicable gate opening information shall be recorded on a daily basis by the licensee. The licensee shall develop gate opening versus flow relationships, incorporating headpond variations as necessary, for the purpose of determining flow using the information recorded daily. These relationships shall be reviewed periodically, and updated upon any change in the instream flow release structure.

3.5 IMPLEMENTATION SCHEDULE

The licensee shall implement provision of the instream flows specified in Section 3.3 as specified in Table 2-1.

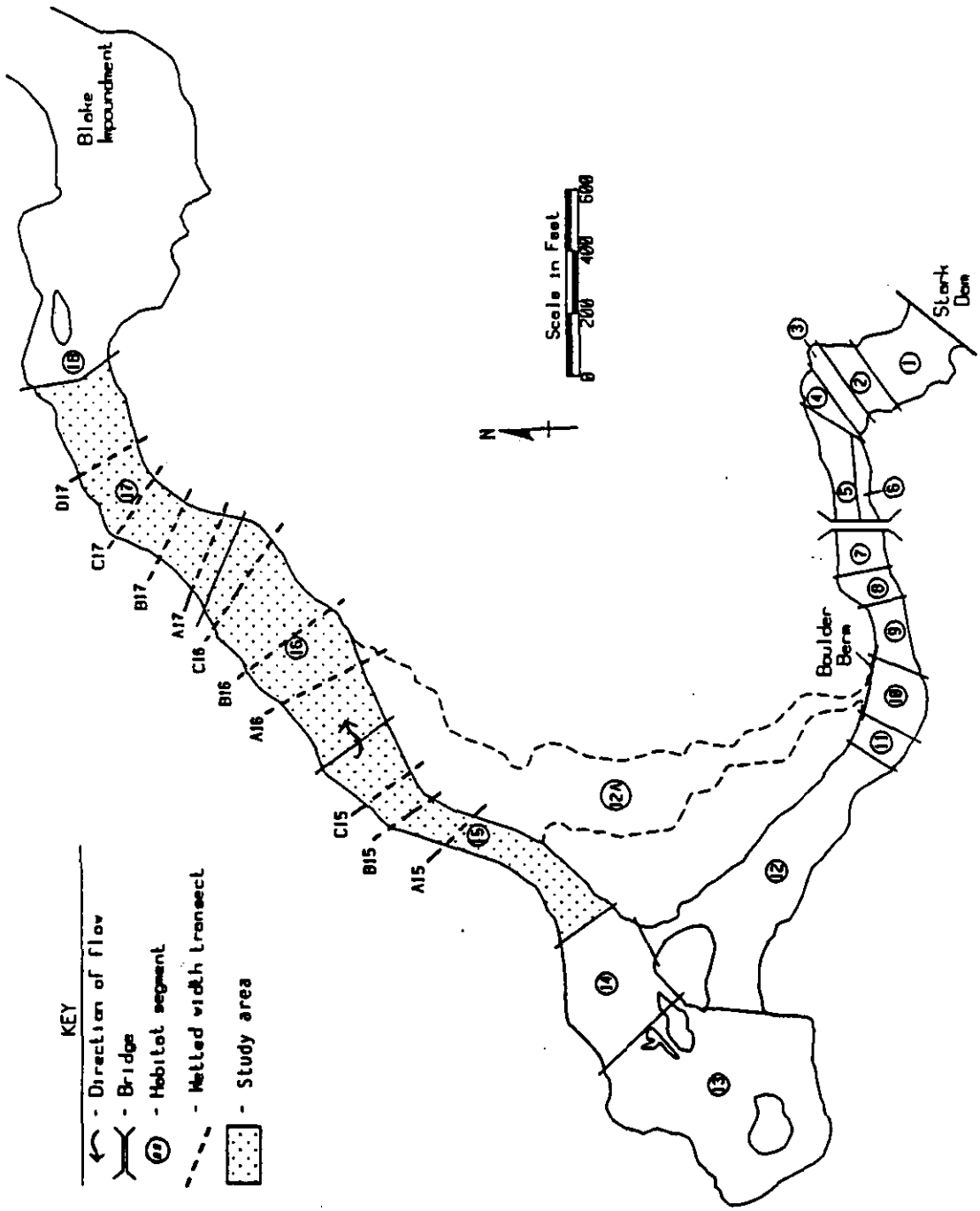


Figure 3-1
Stark Bypass Reach, Habitat Map and Study Area
(Source: *Upper Raquette River Hydroelectric Projects Delphi Instream Flow Study, Final Report 1997*)

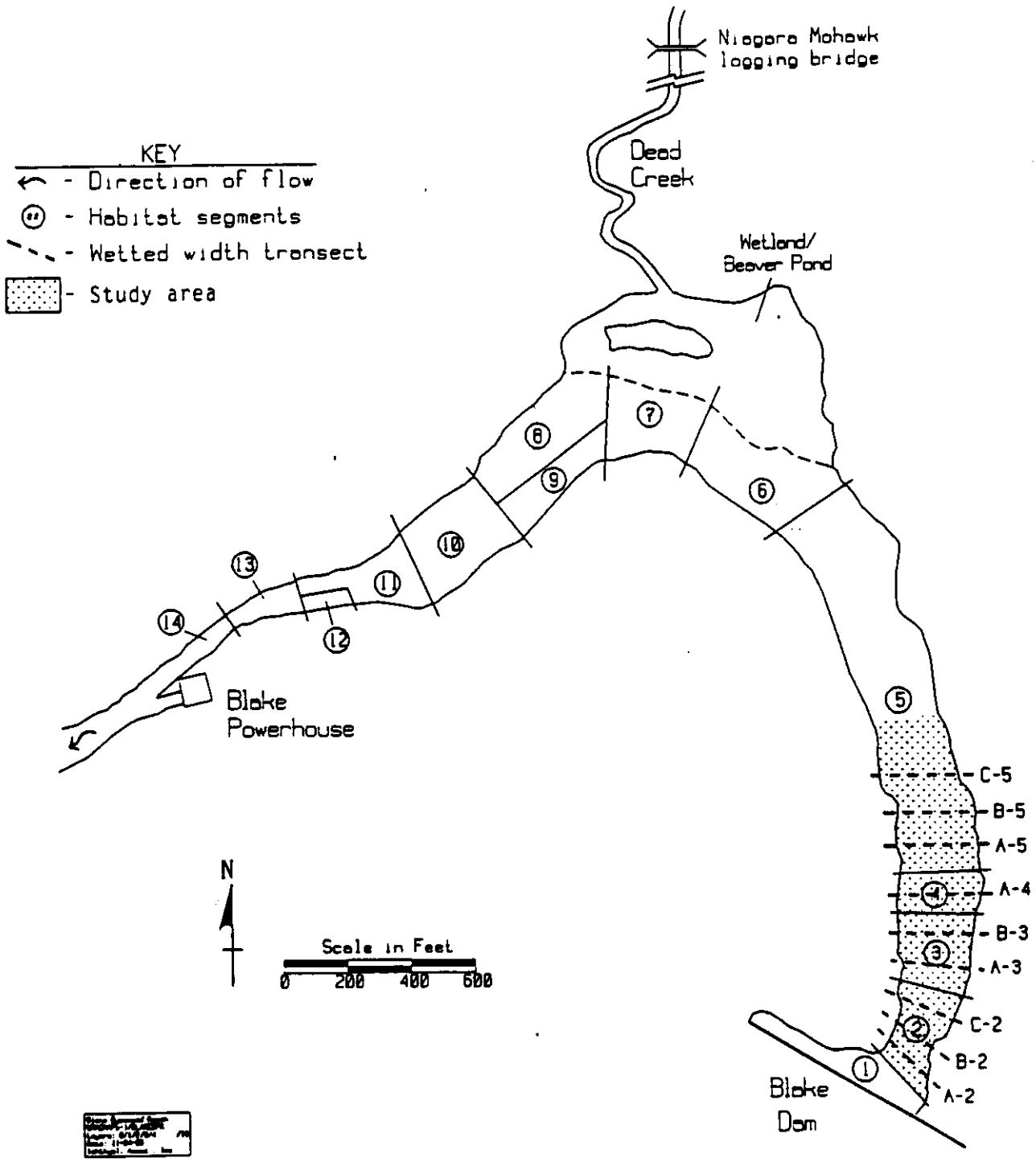


Figure 3-2
Blake Bypass Reach, Habitat Map and Study Area
(Source: *Upper Raquette River Hydroelectric Projects Delphi Instream Flow Study, Final Report 1997*)

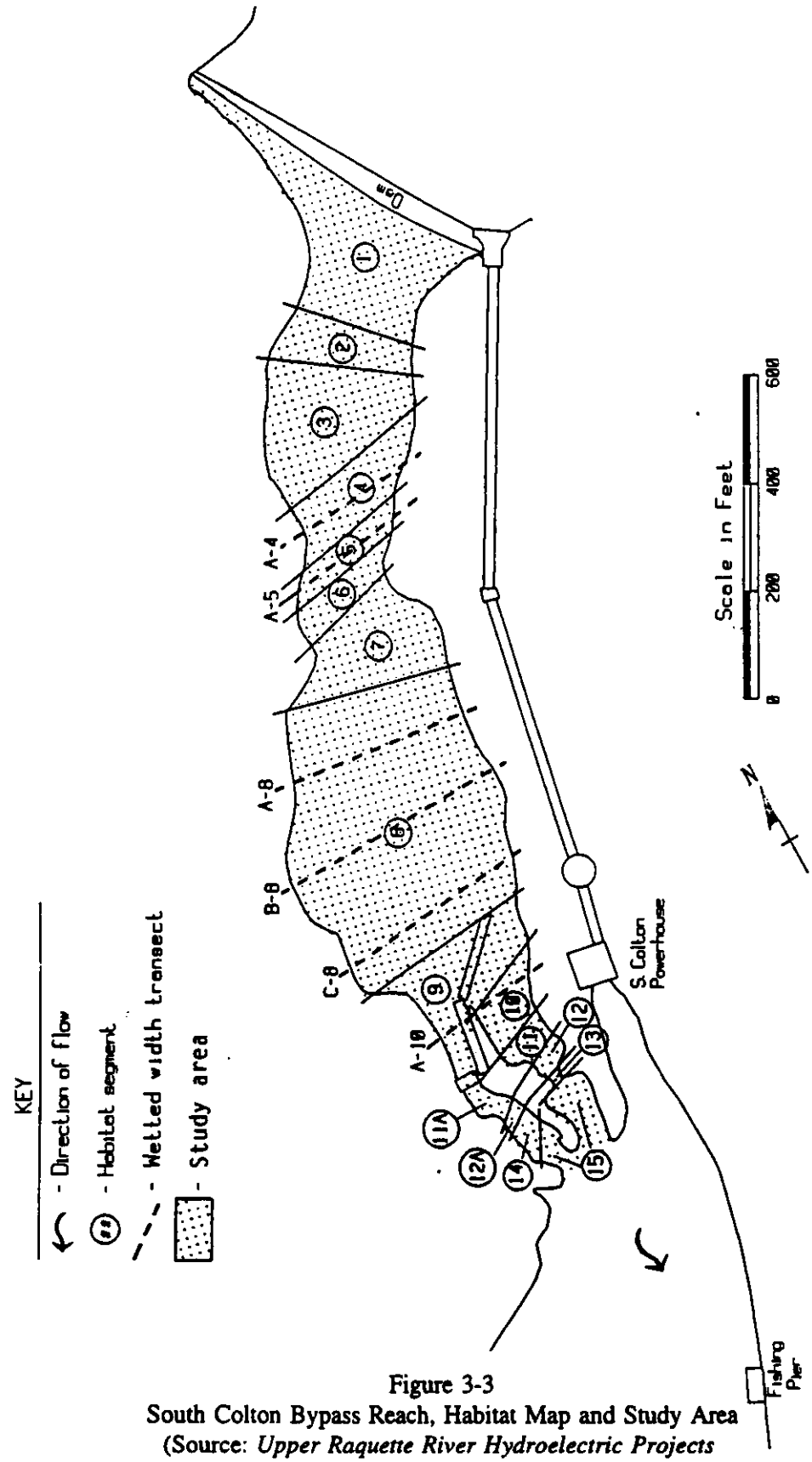


Figure 3-3
South Colton Bypass Reach, Habitat Map and Study Area
(Source: *Upper Raquette River Hydroelectric Projects Delphi Instream Flow Study, Final Report 1997*)

4.0. NORMAL IMPOUNDMENT FLUCTUATIONS

4.1 INTRODUCTION

Operation of Carry Falls Reservoir (see Section 5.3.1), re-regulation of river flow, and the resulting normal impoundment fluctuations are critical in the overall operation of the hydroelectric developments of the Upper, Middle, and Lower Raquette River Hydroelectric Projects. Studies conducted by the licensee in support of the Carry Falls, Upper Raquette River, Middle Raquette River, and Lower Raquette River Hydroelectric Projects are listed in Appendix 1.

Within the Upper Raquette River Hydroelectric Project, normal impoundment fluctuations are required by the peaking and load following operation of the project. The project is operated remotely by a system that controls interaction among: (1) electro-mechanical hardware at each development, (2) remote software which dispatches control signals to the hardware, and (3) the logic routines dictating control signal selection.

The five developments of the Upper Raquette River Hydroelectric Project are operated by the SHCC using the AGC system in a run-of-river, store-and-release peaking, or load following mode. The single unit within each development will operate continuously if the release from Carry Falls Reservoir equals or exceeds the daily hydraulic operating point of the development (run-of-river mode). If the release is less than this, the development will operate using a combination of inflow, and flow from storage, to meet load scheduling requirements as specified by the AGC (store-and-release peaking mode). Upon reaching the allowable drawdown limit, the development will shut down as the pond refills.

Within the Middle Raquette River Hydroelectric Project, normal impoundment fluctuations are required in the re-regulating operation of the Higley Development, and the run-of-river with pondage mode of operation at the remaining three developments. Since the hydraulic capacity of the Upper Raquette Developments is roughly double that of the Middle and Lower Raquette Developments, re-regulation is necessary to convert the peaking outflow of the Upper Raquette into steadier round-the-clock flows for the remainder of the river. Re-regulation occurs at the Higley Development by utilizing impoundment fluctuations and appropriate sequence of unit operation. The remaining three developments operate in either: (1) a run-of-river mode where instantaneous inflow equals instantaneous outflow, utilizing no storage, or (2) a run-of-river with pondage mode whereby each development utilizes multiple units, in conjunction with the allowable drawdown, such that outflow from the development may fluctuate above or below the instantaneous inflow to the development.

Within the Lower Raquette River Hydroelectric Project, normal impoundment fluctuations are required in the store-and-release pulsing operation of each development. In this mode of operation, outflow of these single-unit developments is regulated in an on/off cyclic manner which varies in response to the level of instantaneous inflow. The four developments of the Lower Raquette River Hydroelectric Project operate in either a run-of-river mode, or the store-and-release pulsing mode

where the single unit of each given development will operate continuously if inflow equals or exceeds the hydraulic capacity of the development (run-of-river mode). If inflow is less than this, the unit will operate using a combination of inflow and flow from storage until the allowable drawdown limit is reached (store-and-release pulsing mode). Upon reaching this limit, the single unit will shut down as the pond refills. This store-and-release pulsing operation will be modified as necessary to ensure provision of the baseflow below the Raymondville Development (see Section 5.3.3).

4.2 GENERAL AGREEMENTS

Normal impoundment fluctuations specified in Section 4.3 shall be defined as the maximum drawdown limit within a given impoundment associated with the operating range necessary to achieve run-of-river with pondage, store-and-release peaking, load following, re-regulating, or store-and-release pulsing hydropower operations. Except as noted in Table 4-1, drawdown limits shall be measured in the downward direction from permanent crest of dam, or top of flashboards if they have been installed. Establishment of the drawdown limit below top of flashboards shall begin after initial recharge of the impoundment following flashboard installation. Water surface elevations higher than permanent crest of dam, or top of flashboards if they have been installed, are considered outside of the normal impoundment fluctuation zone, and variations of same are not considered as a utilization of the normal impoundment fluctuation.

4.2.1 JUSTIFICATION

Each of the allowable impoundment fluctuations described in this section maintains the status quo or reduces existing drawdowns. At those sites where the status quo is incorporated into the settlement (Stark*, Blake, Rainbow, Five Falls, South Colton, Hannawa, Sugar Island, Norwood, and Norfolk - *see footnotes on Table 4-1), the existing shallow water littoral and wetland habitat will be maintained. At those sites where fluctuations are reduced (Higley, East Norfolk, and Raymondville), the size of the fluctuation zone will be reduced, resulting in improved primary productivity. This improvement in productivity should result in improved benthic invertebrate productivity and improvements to fish spawning and nursery habitat. At the only site where fluctuations are increased (Colton), the increase from a fluctuation of 0.3 feet to 0.4 feet will not adversely affect primary productivity within the impoundment.

4.3 SPECIFIC TERMS OF SETTLEMENT

4.3.1 CARRY FALLS PROJECT No. 2060

The Carry Falls Project is a non-power storage reservoir. The licensee shall only be limited in fluctuating the elevation of Carry Falls Reservoir as specified in Section 5.3.1.

4.3.2 UPPER RAQUETTE RIVER HYDROELECTRIC PROJECT No. 2084

The licensee shall limit fluctuations within the impoundments of the five developments of the Upper Raquette River Hydroelectric Project as defined in Table 4-1.

Table 4-1
Upper Raquette River Hydroelectric Project
Normal Impoundment Fluctuations[1]

Development	Permanent Crest of Dam (feet USGS)	Height of Flashboards	Normal Impoundment Fluctuation Magnitude (Elevation Range)
Stark	1355.0	none	1.0 foot (1354.7 to 1353.7)[2]
Blake	1250.5	none	1.0 foot (1250.2 to 1249.2)
Rainbow	1181.5	none	1.0 foot (1181.2 to 1180.2)
Five Falls	1077.0	none	2.0 feet (1076.7 to 1074.7)
South Colton	973.5	none	2.0 feet (973.2 to 971.2)

1 Normal impoundment fluctuations of the developments of the Upper Raquette River Project are measured from 0.3 feet below permanent crest of dam.

2 The crest of Stark Dam is at elevation 1355 which results in a backwater to Carry Falls Dam. To allow for drawdowns of Carry Falls Reservoir below elevation 1355 as specified in Section 5.4.1, the Stark impoundment would have to be drawn down in conjunction with Carry Falls Reservoir. In these circumstances, the impoundment fluctuation within Stark impoundment may be greater than 1.0 foot (see also Section 5.3.2).

4.3.3 MIDDLE RAQUETTE RIVER HYDROELECTRIC PROJECT No. 2320

The licensee shall limit fluctuations within the impoundments of the four developments of the Middle Raquette River Hydroelectric Project as defined in Table 4-2.

Table 4-2
Middle Raquette River Hydroelectric Project
Normal Impoundment Fluctuations

Development	Permanent Crest of Dam (feet USGS)	Height of Flashboards	Normal Impoundment Fluctuation
Higley	880.6	3.0 foot trippable wooden flashboards	(See Table 4-2a)
Colton	835.0	2.0 foot pneumatic flashboards	0.4 feet
Hannawa	548.5	3.5 foot trippable wooden flashboards	0.4 feet
Sugar Island	470.0	none	1.0 feet

The Higley Development serves dual purposes of providing re-regulation of peaking flows from the Upper Raquette river, as well as providing significant recreational opportunities during summer months. To facilitate these dual purposes, the licensee shall limit impoundment fluctuations at the Higley Development as defined in Table 4-2a.

Table 4-2a
Higley Development
Normal Impoundment Fluctuations

Time of Year	Day of Week	Target Elevation (feet USGS)
Memorial Day Weekend through Labor Day Weekend	10:00 pm Friday through 6:00 am Monday	*By 10:00 pm on Friday* - impoundment to be at, or near, top of flashboards (elevation 883.6). *Over the course of the weekend* - utilize a 2.0 foot drawdown. *By 6:00 am Monday* - impoundment at, or near, 2.0 feet below top of flashboards (elevation 881.6)
Memorial Day Weekend through Labor Day Weekend	6:00 am Monday through 10:00 pm Friday	2.5 foot impoundment fluctuation utilized as needed to facilitate re-regulation (elevation 883.6 to 881.1).
End of Labor Day Weekend to Start of Memorial Day Weekend	all days	2.5 foot impoundment fluctuation utilized as needed to facilitate re-regulation (elevation 883.6 to 881.1).

4.3.4 LOWER RAQUETTE RIVER HYDROELECTRIC PROJECT No. 2330

The licensee shall limit fluctuations within the impoundments of the four developments of the Lower Raquette River Hydroelectric Project as defined in Table 4-3.

Table 4-3
Lower Raquette River Hydroelectric Project
Normal Impoundment Fluctuations

Development	Permanent Crest of Dam (feet USGS)	Height of Flashboards	Normal Impoundment Fluctuation
Norwood	326.1	1.0 foot non-trippable wooden flashboards	0.5 feet
East Norfolk	287.9	none	0.5 feet
Norfolk	254.1	0.83 foot (10 inch) non-trippable wooden flashboards	1.0 feet
Raymondville	209.6	2.0 foot rubber/steel pneumatic flashboard system	0.5 feet

4.4 EXCEPTIONS AND MONITORING

4.4.1 EXCEPTIONS

Allowances have been made to accommodate circumstances which necessitate exceeding normal impoundment fluctuation limits at any of the developments for which they are being provided. Reasons for same may include, but are not necessarily limited to, the following:

- Maintenance, repair, or reconstruction of project facilities at any hydroelectric project and/or water retaining structure on the Raquette River.
- Maintenance, repair, or reconstruction of nonproject facilities such as roads, bridges, or other structures in, or adjacent to, the river.
- Conditions warranting a drawdown of Carry Falls Reservoir below elevation 1355 (see Section 5.4.1).
- Any emergency situations related to dam safety, human life and property, or rescue.

Exceedance of normal impoundment fluctuations will be for the minimum duration necessary. Normal impoundment fluctuations will be restored as soon as possible after the circumstance for

which they have been exceeded is completed. The licensee may exceed any and/or all of the normal impoundment fluctuation limits if either of the following criteria have been met:

- The Licensee must consult with appropriate NYSDEC staff in Watertown, NY regarding the need and approval to exceed any and/or all normal impoundment fluctuation limits. It will be the responsibility of the NYSDEC to notify the USFWS (and the APA as appropriate) of the request. Documentation of the consultation with NYSDEC officials must describe the need to exceed the limit, and specify the requested duration of the drawdown.

- If an emergency situation exists where consultation will only slow down or impair the Licensees' ability to address immediate dangers related to dam safety, human life and property, or rescue efforts, consultation with the NYSDEC will not be deemed necessary. However, the NYSDEC will be notified as soon as possible of the emergency situation.

4.4.2 MONITORING

The licensee shall maintain adequate operating records clearly indicating impoundment fluctuations. The monitoring of impoundment fluctuations will be addressed in the development of the streamflow monitoring plan developed subsequent to license issuance (see Section 10.5).

4.5 IMPLEMENTATION SCHEDULE

The licensee shall implement the normal impoundment fluctuation limits specified in Section 4.3 concurrent with the implementation of instream flows at each development, or as otherwise specified in Table 2-1.

5.0 CARRY FALLS GUIDE CURVE AND RAYMONDVILLE BASEFLOW

5.1 INTRODUCTION

The Upper Raquette River Hydroelectric Project is a peaking and load following project which operates in this mode via releases from the Carry Falls Reservoir located upstream of the project. Carry Falls Reservoir was constructed in 1952/1953. Full pond and empty pond elevations of the reservoir are 1385.0 and 1331.0 feet respectively (all elevations are feet USGS). The reservoir was originally governed by a guide curve (see Section 5.2.1) which allowed for seasonal drawdowns in both the spring and fall to elevation 1331 feet. Circa 1971, the licensee altered the original guide curve, denoting a spring drawdown to 1332 feet and fall drawdown to 1352 feet (see lower curve, Figure 5-1). This represents the limits of the existing guide curve the licensee has utilized to date, and will continue to utilize, until implementation of the new guide curve described as part of this Settlement.

The Stark dam and impoundment (of the Upper Raquette River Hydroelectric Project) are located immediately downstream of the Carry Falls dam. The crest of Stark dam is at elevation 1355 which results in a backwater of the Stark impoundment to Carry Falls dam. Between elevation 1385 feet and 1355 feet, hydraulic control of Carry Falls Reservoir is achieved via the gates at Carry Falls dam. To achieve any drawdown of Carry Falls Reservoir below elevation 1355, it is necessary to draw the Stark impoundment down in conjunction with Carry Falls Reservoir, at which time the two bodies of water are linked, with hydraulic control of the composite reservoir/impoundment system shifted to the gates at the Stark dam.

The Raymondville Development of the Lower Raquette River Hydroelectric Project is the most downstream hydroelectric facility on the Raquette River. The Raymondville Development is 20 miles upstream of the confluence with the St. Lawrence River and Seaway and operates in either a run-of-river mode, or a store-and-release mode. That is, the single unit at Raymondville will operate continuously (run-of-river mode) if inflow equals or exceeds the hydraulic capacity of the development (1528 cfs efficient, 1640 cfs maximum). If inflow is less than this, the single unit will operate using a combination of inflow and flow from storage until pre-set low impoundment limits are reached (store-and-release mode). Upon reaching this low pond level, the single unit will not operate as the pond refills. It is this refilling process which can result in low, or no, flow conditions in the 20 miles of river downstream of the development.

Although separated by 48 miles of river, the operation of Carry Falls Reservoir and the Raymondville Development are linked. The magnitude of releases from Carry Falls reservoir ultimately determines whether Raymondville will operate in the store-and-release mode or run-of-river mode. Additionally, if Raymondville operates in the store-and-release mode, the magnitude of the release from Carry Falls will be a determining factor in the duration Raymondville is shut down as its pond refills for another cycle. The magnitude of releases from Carry Falls is a function of: (1) the guide curve and where Carry Falls Reservoir is in relation to the guide curve, (2) actual and projected inflow conditions to

Carry Falls Reservoir, (3) desired generation levels at the Colton Development of the Middle Raquette River Hydroelectric Project, and desired generation levels of all developments of the Upper Raquette River Hydroelectric Project. Studies conducted by the licensee in support of the Carry Falls, Upper Raquette River, Middle Raquette River, and Lower Raquette River Hydroelectric Projects are listed in Appendix 1.

5.2 GENERAL AGREEMENTS

5.2.1 DEFINITION OF GUIDE CURVE

For the purpose of this settlement, a guide curve is defined as a series of target elevations over the course of a given year for a storage reservoir. The guide curve may have absolute elevation limitations. Operation of the reservoir may be above or below the target elevations until any absolute elevation limitations are reached, at which point the absolute elevation limitations must be adhered to.

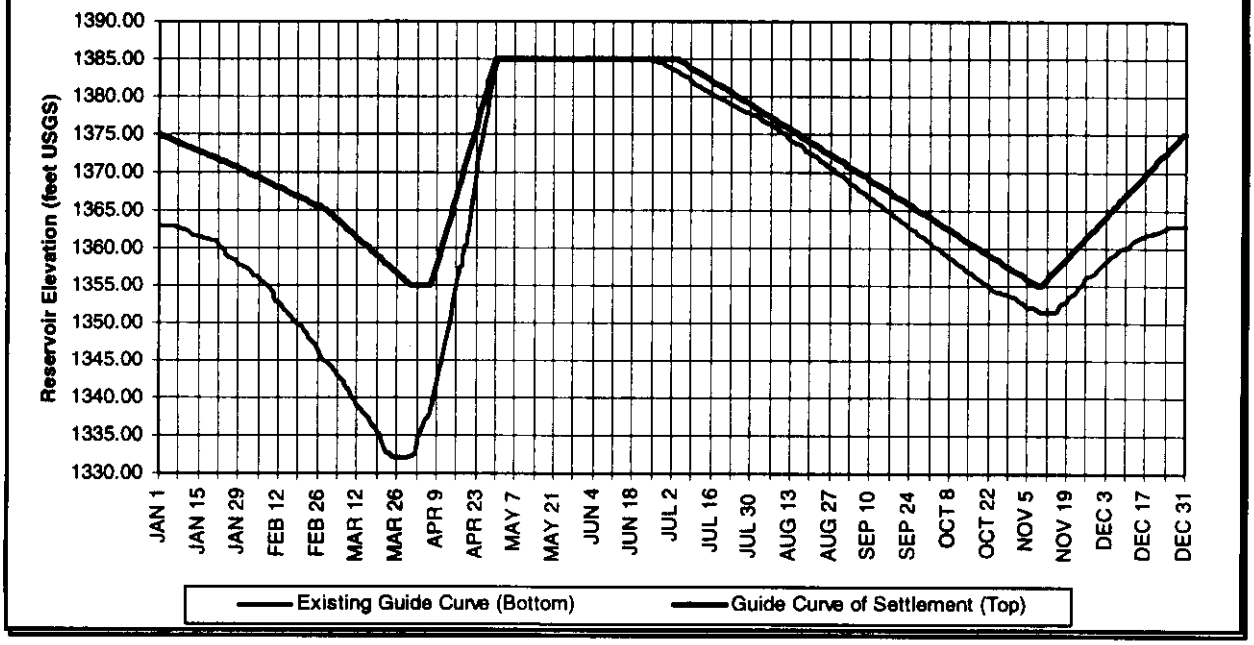
5.2.2 CARRY FALLS RESERVOIR GUIDE CURVE

The existing guide curve allows for late winter/spring drawdowns from elevation 1385 feet to elevation 1332 feet and fall drawdowns to approximately elevation 1352 feet. Each requires a drawdown within the Stark impoundment (see Section 5.1). The guide curve of the Settlement will allow for late winter/spring drawdowns from elevation 1385 feet to elevation 1355 feet, and fall drawdowns to elevation 1355 feet (see Section 5.4.1).

5.2.3 RAYMONDVILLE DEVELOPMENT BASEFLOW

A tiered baseflow below Raymondville Development will be maintained. The baseflow will be 560 cfs during "wet" and "normal" conditions. During "dry" conditions, the baseflow will be reduced to 290 cfs. During "drought" conditions the licensee will initiate a baseflow equal to the daily average flow of the Piercefield USGS gage and consult with appropriate NYSDEC staff to determine any appropriate adjustments to the baseflow and/or the Carry Falls drawdown limit. Baseflow magnitudes are to be maintained in the reach below Raymondville beginning at the Kent Mill "cemetery riffle" located approximately 4 miles downstream of Raymondville. The various conditions are defined in Section 5.3.3.

Figure 5-1
Carry Falls Reservoir
Existing Guide Curve and Guide Curve of Settlement



5.3 SPECIFIC TERMS OF SETTLEMENT

5.3.1 CARRY FALLS GUIDE CURVE

The Licensee shall operate the Carry Falls Reservoir according to the guide curve of the Settlement shown in Figure 5-1. The Licensee may operate above and/or below the guide curve with the exception that the ultimate low level of any drawdown as part of normal operation will be limited to elevation 1355 feet (see Section 5.4.1).

5.3.1.1 Justification

The revised guide curve at Carry Falls reduces the late winter/spring drawdown by over 40 percent and reduces the fall drawdown. A large percentage of the reservoir substrate will no longer be seasonally exposed, with the number of acres of reservoir substrate wetted 100 percent of the time increased from 700 acres to over 2,500 acres. Within the Carry Falls/Stark impoundment system, the reduced drawdown will improve wetlands and aquatic habitats, leading to greater benthic invertebrate production, improved fish spawning and nursery areas, improved habitats for reptiles and amphibians, and greater abundance and diversity of fish and wildlife resources. Although the Carry Falls Reservoir was not designed for flood control purposes, there is incidental flood control

derived from the reservoir operation under the current guide curve. In adopting the new guide curve, this incidental benefit will not be adversely compromised by virtue of the measures described in Section 5.4.1.

5.3.2 UPPER RAQUETTE RIVER HYDROELECTRIC PROJECT No. 2084

The Stark Development of the Upper Raquette River Hydroelectric Project is located downstream of Carry Falls Reservoir. The crest of Stark dam is at elevation 1355 feet which results in a backwater to Carry Falls dam. Historic drawdowns of Carry Falls below 1355 feet have necessitated drawing the Stark impoundment down in conjunction with Carry Falls (see Section 5.1). Although Carry Falls Reservoir will be limited to elevation 1355 feet, the daily allowable drawdown of 1.0 foot to elevation 1354 feet within the Stark impoundment will remain (see Section 4.3.2, Table 4-1 footnote 2).

5.3.2.1 Justification

The revised guide curve eliminates the existing annual seasonal drawdown at Stark impoundment associated with drawdowns of Carry Falls Reservoir below elevation 1355 feet. This stable water level will prevent seasonal exposure of impoundment substrates. The improved wetland and aquatic habitats will result in greater benthic invertebrate production, improved fish spawning and nursery areas, improved habitats for reptiles and amphibians, and greater abundance and diversity of fish and wildlife resources.

5.3.3 RAYMONDVILLE BASEFLOW

The Licensee shall maintain a baseflow downstream of the Raymondville Development of the Lower Raquette River Hydroelectric Project. During "wet" and "normal" conditions, the baseflow shall be at least 560 cfs. During a "dry" condition, the baseflow shall be at least 290 cfs. During a "drought" condition, the licensee will initiate a baseflow equal to the daily average flow of the Piercefield USGS gage and consult with appropriate NYSDEC staff to determine any appropriate adjustments to the baseflow and/or the Carry Falls drawdown limit. These baseflow magnitudes are to be maintained and measured at the area known as Kent Mill "cemetery riffle" located approximately 4 miles downstream of the Raymondville Development (see Figure 5-2 at the end of this section). Total daily average outflow from the Colton Development of the Middle Raquette River Hydroelectric Project, in conjunction with Carry Falls Reservoir elevation and Piercefield USGS gage data will be used in determining the type of flow condition and corresponding baseflow.

To ensure provision of the 560 and 290 cfs baseflow levels, a timer system shall be installed and calibrated into the Lower Raquette River Hydroelectric Project control scheme to maintain the maximum shut-down (or generator motoring time) for the appropriate developments of the Lower Raquette River Hydroelectric Project, resulting in the required minimum instantaneous baseflow (see Section 5.5.2). Definitions of "wet, normal, dry, and drought" conditions are indicated below:

- **"Wet" Condition** - The total daily average outflow from Colton is greater than, or equal to, 1600 cfs *and* the elevation within Carry Falls Reservoir is greater than, or equal to, 1357 feet. During a "wet" condition, the licensee shall maintain a baseflow downstream of Raymondville of at least 560 cfs. The timer system for the Lower Raquette River Hydroelectric Project will not be utilized under the "wet" condition.

- **"Normal" Condition** - The total daily average outflow from Colton is between 650 and 1600 cfs, *and* the elevation within Carry Falls Reservoir is greater than, or equal to, 1357 feet. During a "normal" condition, the licensee shall maintain a baseflow downstream of Raymondville of at least 560 cfs. A timer system for the Lower Raquette River Hydroelectric Project may be utilized under the "normal" condition to ensure provision of the 560 cfs.

- **"Dry" Condition** - The total daily average outflow from Colton is less than 650 cfs, *and* the elevation within Carry Falls Reservoir is greater than, or equal to, 1357 feet. During a "dry" condition, the licensee shall maintain a baseflow downstream of Raymondville of at least 290 cfs. A timer system for the Lower Raquette River Hydroelectric Project will be utilized under the "dry" condition to ensure provision of the 290 cfs.

  Upon decreasing to elevation 1357 feet within Carry Falls Reservoir, the licensee shall begin to monitor the daily average flow record of the Piercefield USGS gage to determine if a "drought" condition (see below) exists which over-rides the "dry" condition. It is anticipated that the "dry" condition may be experienced less than 5 percent of the time annually.

- **"Drought" Condition** - Generally, a "drought" condition shall be defined as the dual occurrence of low inflow to Carry Falls Reservoir coupled with depleted usable storage of the reservoir. Upon decreasing to an elevation of 1357 feet within Carry Falls Reservoir, the licensee shall monitor the daily average flow record of the Piercefield USGS gage (which will serve as the measure of low inflow to the reservoir), and continue monitoring the reservoir elevation (which will serve as the measure of depleted usable storage).

  Daily average flows at Piercefield are approximately 85 percent that of daily average flows measured at Raymondville. This is a result of the intervening drainage area between the two locations. For example, if the daily average flow at Piercefield is 250 cfs, the intervening drainage area will contribute approximately 40 cfs, resulting in 290 cfs at Raymondville. This correlation will be used when specifically defining the "drought" condition below.

  Specifically, a "drought" condition shall be defined as the dual occurrence of a daily average flow at Piercefield less than 250 cfs, *and* a Carry Falls Reservoir elevation less than 1357 feet. During a "drought" condition, the licensee shall initially maintain a baseflow downstream of Raymondville of at least the daily average flow of the Piercefield gage. Additionally, the licensee will notify and consult with appropriate NYSDEC staff to determine if modifications to the baseflow and/or the Carry Falls drawdown limit are warranted. It is anticipated that the "drought" condition may be experienced less than 1 percent of the time annually.

5.3.3.1 Justification

The minimum base flows provide more stable flows to 20 miles of river downstream of Raymondville. They ensure that most of the riffle habitat is adequately watered at all times.

5.4 EXCEPTIONS AND MONITORING

5.4.1 CARRY FALLS GUIDE CURVE EXCEPTIONS

Allowances have been made to accommodate circumstances which necessitate drawdowns below 1355 feet. Reasons for drawdowns below 1355 feet may include, but are not necessarily limited to, the following:

- Maintenance, repair, or reconstruction of project facilities at any hydroelectric project and/or water retaining structure on the Raquette River.
- Maintenance, repair, or reconstruction of nonproject facilities such as roads, bridges, or other structures in, or adjacent to, the river.
- Anticipation of unusual meteorological conditions resulting in a water equivalent which warrants more storage.
- Facilitate the continuation of a baseflow downstream of Raymondville.
- Any emergency situations related to dam safety, human life and property, or rescue.

Drawdowns below elevation 1355 feet will be for the minimum duration necessary. A reservoir elevation of at least 1355 feet will be restored as soon as possible after the circumstance requiring a drawdown below elevation 1355 feet is completed. Drawdowns below 1355 feet will be acceptable if one of the following criteria have been met:

- The Licensee must consult with appropriate NYSDEC staff in Watertown, NY regarding the need and approval for drawdowns below 1355 feet. It will be the responsibility of the NYSDEC to notify the USFWS and APA of the request. Documentation of the consultation with NYSDEC officials must describe the need for the drawdown, specify the requested drawdown level, and specify the requested duration of the drawdown.
- If an emergency situation exists where consultation will only slow down or impair the Licensees' ability to address immediate dangers related to dam safety, human life and property, or rescue efforts, consultation with the NYSDEC will not be deemed necessary. However, the NYSDEC will be notified as soon as possible of the emergency situation following the drawdown.

5.4.2 CARRY FALLS MONITORING

The Licensee shall monitor elevations within the Carry Falls Reservoir by maintaining complete records of daily elevations of Carry Falls Reservoir, as well as maintaining records of any exceptions to the drawdown limit of 1355 feet.

5.4.3 RAYMONDVILLE BASEFLOW EXCEPTIONS

Allowances have been made to accommodate circumstances which necessitate the curtailment and/or suspension of the baseflow below Raymondville. Reasons for same may include, but are not necessarily limited to, the following:

- Maintenance, repair, or reconstruction of project facilities at any hydroelectric project and/or water retaining structure on the Raquette River.

- Maintenance, repair, or reconstruction of nonproject facilities such as roads, bridges, or other structures in, or adjacent to, the river.

- Any emergency situations related to dam safety, human life and property, or rescue.

Curtailment and/or suspension of the baseflow will be for the minimum duration necessary. A baseflow of at least 290 cfs will be restored as soon as possible after the circumstance requiring a baseflow less than 290 cfs is completed. The Licensee may curtail or suspend the Raymondville baseflow if either of the following criteria have been met:

- The Licensee must consult with appropriate NYSDEC staff in Watertown, NY regarding the need and approval to curtail or suspend the baseflow below Raymondville. It will be the responsibility of the NYSDEC to notify the USFWS of the request. Documentation of the consultation with NYSDEC officials must describe the need for the curtailment and/or suspension, and specify the requested duration of the curtailment and/or suspension.

- If an emergency situation exists where consultation will only slow down or impair the Licensees' ability to address immediate dangers related to dam safety, human life and property, or rescue efforts, consultation with the NYSDEC will not be deemed necessary. However, the NYSDEC will be notified as soon as possible of the emergency situation following the curtailment and/or suspension of the baseflow.

5.4.4 RAYMONDVILLE BASEFLOW MONITORING

The Licensee shall monitor the Raymondville baseflow via the recording of headpond elevations, generation levels, duration of generation, and other pertinent data at the appropriate developments of the Lower Raquette River Hydroelectric Project. Additionally, the Licensee shall maintain records of any exceptions to the baseflow. Simple water stage markers shall be installed at the "cemetery riffle" to allow for independent verification of the 560 cfs and 290 cfs flow levels. Access to these markers shall be via lands owned by the State of New York on the east bank of the river.

5.5 IMPLEMENTATION SCHEDULE

5.5.1 CARRY FALLS GUIDE CURVE

The licensee shall implement the guide curve shown in Figure 5-1 as specified in Table 2-1.

5.5.2 RAYMONDVILLE BASEFLOW

To ensure provision of the 560 and 290 cfs baseflow levels, a timer system shall be installed and calibrated into the Lower Raquette River Hydroelectric Project control scheme to maintain the maximum shut-down (or generator motoring time) for the appropriate developments of the Lower Raquette River Hydroelectric Project, resulting in the required instantaneous minimum baseflow. Additionally, indirect relationships of the Raymondville USGS gage (located immediately downstream of the Raymondville Development) shall be developed as part of the implementation of the timer scheme. These indirect relationships will correlate flow, and duration of flow, at the Raymondville USGS gage to a corresponding baseflow magnitude at the "cemetery riffle".

Calibration of the optimum unit shut-down/generator motoring time will be subject to an in-situ field testing procedure to be implemented as soon as river conditions permit subsequent to issuance of a new license. The timer scheme, or its equivalent, shall be fully operational within one year of license issuance, assuming control of the river is achievable (see Table 2-1.)

6.0 FISH PASSAGE AND PROTECTION

6.1 INTRODUCTION

The Carry Falls and Upper Raquette River Hydroelectric Projects are being relicensed under a collaborative multi-project context. Studies to support this relicensing effort were conducted between 1995 and 1997. An entrainment evaluation, *An Evaluation of Fish Entrainment and Mortality at the Carry Falls Project (FERC No. 2060) and Upper Raquette River Hydroelectric Project (FERC No. 2084) Raquette River, St. Lawrence County, New York* (ND&T/IA, June 1997) was conducted in the summer of 1996 to evaluate the potential for fish entrainment and mortality at the five developments of the Upper Raquette River Hydroelectric Project. This study provided information to help develop the downstream fish movement and protection measures ultimately agreed upon within this Settlement for the Upper Raquette River Hydroelectric Project.

A vast array of studies have been conducted in support of the relicensing of the Middle and Lower Raquette River Hydroelectric Projects - both Class of 1993 projects. These include studies conducted prior to filing of the license applications between 1986 and 1991, as well as subsequent evaluations as part of 2nd and 3rd Stage Consultation and the settlement process. This array of studies and evaluations was used in developing downstream fish movement and protection measures ultimately agreed upon within this Settlement for the Middle and Lower Raquette River Hydroelectric Projects. Studies conducted by the licensee in support of the Carry Falls, Upper Raquette River, Middle Raquette River, and Lower Raquette River Hydroelectric Projects are listed in Appendix 1.

6.2 GENERAL AGREEMENTS

Thirteen hydroelectric developments and one storage reservoir make up the four projects within this settlement. The licensee shall provide measures to facilitate downstream fish movement at all thirteen hydroelectric developments, and fish protection measures at twelve developments as specified in Section 6.3. Installation of downstream fish movement and protection measures shall be phased as specified in Section 6.4 and Table 2-1.

Downstream fish movement and protection measures may consist of one, or all, of the following components: (1) a physical protection device with 1-inch clear spacing designed to deter many adult fish from entering the turbine(s) of a given development, (2) an alternate route of downstream fish movement out of a given impoundment, and (3) a movement and plunge pool system designed to reduce damage to fish after moving out of a given impoundment (safe fish movement).

At the ten developments where instream flows are required (see Section 3.0), the instream flow release point shall also provide for safe downstream fish movement. At two of the ten developments (Colton and Norfolk), the instream flow release will be provided from two locations. As such, primary downstream fish movement points at Colton and Norfolk are specified in Section 6.3. The licensee shall provide for safe fish movement at only the designated primary downstream movement point. At the three developments where instream flows are not required (Higley, Norwood, and Raymondville), downstream fish movement shall be provided via gate structures as specified in Section 6.3.

The geometry of the water conveyance opening of all downstream fish movement release structures shall be modified, as needed, to reduce the potential of damage to fish as they move through the release structure. If the release structure empties onto the face of a spillway, the licensee shall provide a means to reduce dispersion of the release across the face of the spillway. Additionally, the licensee shall attempt to reduce the roughness of the spillway face and provide a plunge pool at the toe of the spillway. Plunge pools shall have a depth of approximately 25 percent of the vertical distance of any free fall. The quantity of downstream fish movement flow releases specified in Section 6.3 shall be considered nominal as defined for instream flows in Section 3.2.

The following conditions shall apply to all thirteen developments where fish protection and/or downstream movement measures are being provided:

- The licensee shall not be required to provide upstream fish passage facilities at this time.

- The licensee shall not be required to: (1) test the effectiveness of any, or all, of the components of the movement and protection measures, (2) make qualitative or quantitative determinations of numbers of fish entrained, or (3) provide compensation for any fish entrained.

- The licensee shall not be required to increase the level of protection provided or be required to add additional points of downstream fish movement beyond what is specified in Section 6.3.

The U.S. Department of the Interior will reserve their authority under Section 18 of the Federal Power Act to require upstream and downstream fish passage facilities during the term of the license.

6.2.1 JUSTIFICATION

6.2.1.1 Fish Protection

Devices with 1" clear openings will be installed at all sites (except Sugar Island) to physically deter most adult game fish from entering the turbines. Smaller fish, which generally have a higher survival rate through the turbines, may also be behaviorally deterred by these devices. These fish protection measures will be implemented over time, commencing with the most downstream site (Raymondville) and generally working upriver. Some exceptions may occur to allow for construction to occur in conjunction with other maintenance activities or to replace deteriorated trashracks. The main purpose in starting at the mouth of the river is to afford additional protection to American eel, which were found to be entrained at Raymondville and may be located in other Lower Raquette River impoundments. Sugar Island will not have protective measures installed due to a goal of facilitating movement of adult fish, via a tap off the pipeline, from the relatively small impoundment to the downstream reach which will be receiving the largest minimum flows of any bypass reach on the river.

6.2.1.2 Fish Passage

The U.S. Department of the Interior will reserve its authority under Section 18 of the Federal Power Act to prescribe upstream or downstream fish passage facilities in the future. This reservation ensures that adequate facilities for fish passage will be in place should management goals or needs change during the life of the license.

No fishways are being constructed as part of this settlement. However, downstream fish movement will be facilitated at all sites. For those sites with minimum flow releases, the minimum flow release structure will serve to facilitate downstream fish movement. For the three sites without minimum flow releases (Raymondville, Norwood, and Higley), a 20 cfs release for downstream fish movement will be provided through an existing gate. These gates will be designed or modified, as necessary, to ensure safe downstream movement of fish. These modifications will include reducing the roughness of the spillway, reducing dispersion of the release across the spillway face, and creating an adequate plunge pool, where adequate is defined as a plunge pool with a depth of approximately 25 percent of any vertical free fall. Wherever feasible, these release gates are located near the trashracks, which will enhance the ability of fish to locate the movement route. The flows are generally of sufficient volume to serve as attractant flows to help guide the fish to the release structure. Each site has been specifically examined by biologists and engineers to determine the most feasible fish movement route. Factors considered were proximity to the trashracks, use of existing facilities, adequate plunge pools and conveyance to downriver areas, and engineering cost and feasibility. The locations have been chosen to maximize the attraction flow and the ability of the fish to locate the movement route while minimally disrupting project operations. The exception is at Norwood, where the ice sluice adjacent to the trashrack is located behind the trashracks, requiring the fish to move up and over the trashracks to locate the route of movement. Coupled with the difficulty of developing an adequate plunge pool at this location and the presence of old mill ruins in

the plunge pool area, it was determined that the trash sluice on the west end of the dam would be a more efficient route for downstream fish movement. An adequate plunge pool already exists there.

Sugar Island is also a somewhat unique situation in that downstream movement will occur through a tap off the existing pipeline. This route was necessitated by the presence of large taintor gates adjacent to the trashracks. These gates could not be feasibly altered to provide the minimum flow release. Notching the dam was considered but rejected due to dam safety concerns at this site. Many fish will likely exit the pipeline via this tap. An adequate plunge pool exists at the terminus of this tap.

6.3 SPECIFIC TERMS OF SETTLEMENT

6.3.1 CARRY FALLS PROJECT No. 2060

The Carry Falls Project is a non-power storage reservoir with no generating facilities. As such, the licensee shall not be required to provide downstream fish movement or protection measures at the Carry Falls Project.

6.3.2 UPPER RAQUETTE RIVER HYDROELECTRIC PROJECT No. 2084

The licensee shall provide the following downstream fish movement and protection measures at the five developments of the Upper Raquette River Hydroelectric Project. The licensee shall provide this route of downstream movement coincident with the point of instream flow release at each development (see Section 3.3.2).

Table 6-1
Upper Raquette River Hydroelectric Project
Downstream Fish Movement and Protection Measures

Development	Protection Measure	Primary Route of Downstream Movement	Conveyance and Collection System
Stark	1-inch clear spacing physical barrier installed at the location of the existing trashrack structure	45 cfs via instream flow release structure (see Section 3.3.2.1).	(1) Roughness reduction of spillway face. (2) Measures to reduce dispersion of the release across spillway face. (3) Construct plunge pool.
Blake	1-inch clear spacing physical barrier installed at the location of the existing trashrack structure	55 cfs via instream flow release structure (see Section 3.3.2.2).	(1) Roughness reduction of spillway face. (2) Measures to reduce dispersion of the release across spillway face. (3) Construct plunge pool.
Rainbow	1-inch clear spacing physical barrier installed at the location of the existing trashrack structure	20 cfs via instream flow release structure (see Section 3.3.2.3).	(1) Roughness reduction of spillway face. (2) Measures to reduce dispersion of the release across spillway face. (3) Construct plunge pool.
Five Falls	1-inch clear spacing physical barrier installed at the location of the existing trashrack structure	50 cfs via instream flow release structure (see Section 3.3.2.4).	(1) Roughness reduction of spillway face. (2) Measures to reduce dispersion of the release across spillway face. (3) Construct plunge pool.
South Colton	1-inch clear spacing physical barrier installed at the location of the existing trashrack structure	20 cfs via instream flow release structure (see Section 3.3.2.5).	(1) Roughness reduction of spillway face. (2) Measures to reduce dispersion of the release across spillway face. (3) Construct plunge pool.

6.3.3 MIDDLE RAQUETTE RIVER HYDROELECTRIC PROJECT No. 2320

The licensee shall provide the following downstream fish movement and protection measures at the four developments of the Middle Raquette River Hydroelectric Project. Where applicable, the licensee shall provide the route of downstream movement coincident with the point of instream flow release at each development (see Section 3.3.3), otherwise downstream movement shall be provided as indicated in Table 6-2, and Section 6.3.3.1.

Table 6-2
Middle Raquette River Hydroelectric Project
Downstream Fish Movement and Protection Measures

Development	Protection Measure	Primary Route of Downstream Fish Movement	Conveyance and Collection System
Higley	1-inch clear spacing physical barrier installed at the location of the existing trashrack structure.	20 cfs via stoplog section located between intake canal and spillway (see 6.3.3.1).	(1) Roughness reduction of spillway face. (2) Measures to reduce dispersion of the release across spillway face. (3) Release structure empties into a pool of adequate dimensions. No additional modifications required.
Colton	1-inch clear spacing physical barrier installed at the location of the existing trashrack structure.	At least 20 cfs via rehabilitated trash sluice structure (see 6.3.3.1 below).	At the time of rehabilitation of intake structure licensee shall retrofit trash sluice return channel to accommodate fish safe conveyance and collection (see 6.3.3.1 below).
Hannawa	1-inch clear spacing physical barrier installed at the location of the existing trashrack structure at the upstream end of the power canal (see 6.3.3.1 below).	50 cfs via instream flow release structure (see Section 3.3.3.3).	(1) Roughness reduction of spillway face (2) Measures to reduce dispersion of the release across spillway face. (3) Construct plunge pool.
Sugar Island	None (see 6.3.3.1 below)	300 cfs via instream flow release structure (see Section 3.3.3.4).	Instream flow release structure empties into a pool of adequate dimensions. No additional modifications required.

6.3.3.1 Other Considerations

- **Higley** - An instream flow is not required at the Higley Development. However, the licensee shall provide a 20 cfs release for the purpose of providing a route of downstream movement of fish. The route of downstream movement shall be through the stoplog section of the dam located between the intake canal and spillway.

- **Colton** - The intake structure of the Colton Development is currently scheduled to be rehabilitated in 1997/1998. A butterfly flap gate located immediately adjacent to the pipeline intake serves as a trash sluice. This gate empties to a short channel which merges with the bypass reach. At the time of the intake rehabilitation work, this gate shall be retrofitted to serve as the primary downstream fish movement point. Additionally, the licensee shall provide a plunge pool of adequate dimensions as needed, as well as clear debris in the short channel between the gate and bypass reach. The licensee shall utilize this gate for the provision of at least 20 cfs of the instream flow schedule specified in Section 3.3.3.2 or until the hydraulic capacity of the gate is reached, whichever is greater, at which point the licensee shall utilize secondary gates to provide any remainder of the instream flow. The licensee shall not be required to provide safe fish movement and/or downstream plunge pools at the secondary gates.

- **Hannawa** - Two sets of trashracks exist at the Hannawa Development - one at the upstream end of the power canal, and the second at the downstream end of the power canal. The licensee shall only be required to install the 1-inch protection device at the set of racks at the upstream end of the power canal.

- **Sugar Island** - Due to the small size of the impoundment and the location of the instream flow release structure (downstream of the existing trashracks), the signators concluded that fish protection was not required at the Sugar Island Development.

6.3.4 LOWER RAQUETTE RIVER HYDROELECTRIC PROJECT No. 2330

The licensee shall provide the following downstream fish movement and protection measures at the four developments of the Lower Raquette River Hydroelectric Project. Where applicable, the licensee shall provide the route of downstream movement coincident with the point of instream flow release at each development (see Section 3.3.4), otherwise downstream movement shall be provided as indicated in Table 6-3, and Section 6.3.4.1.

Table 6-3
Lower Raquette River Hydroelectric Project
Downstream Fish Movement and Protection Measures

Development	Protection Measure	Primary Route of Downstream Fish Movement	Conveyance and Collection System
Norwood	1-inch clear spacing physical barrier installed at the location of the existing trashrack structure	20 cfs via stoplog structure adjacent to left abutment of dam (see 6.3.4.1 below).	(1) Roughness reduction of spillway face. (2) Measures to reduce dispersion of the release across spillway face. (3) Release structure empties into a pool of adequate dimensions. No additional modifications required.
East Norfolk	1-inch clear spacing physical barrier installed at the location of the existing trashrack structure	75 cfs via instream flow release structure (see Section 3.3.4.2).	(1) Construct plunge pool.
Norfolk	1-inch clear spacing physical barrier installed at the location of the existing trashrack structure	37.5 cfs via trash sluice structure located at transition of power canal to pipeline (see 6.3.4.1 below).	(1) Modify constructed trash sluice flume to reduce flow velocity. (2) Construct adequate plunge pools and conveyance routes in the rip-rap basin and obstructed channel between the trash sluice flume and bypass reach (see 6.3.4.1 below).
Raymondville	1-inch clear spacing physical barrier installed at the location of the existing trashrack structure	20 cfs via trash sluice structure and/or via low level sluice gate (see 6.3.4.1 below).	(1) Modify pool adjacent to the powerhouse to ensure adequate dimensions (see 6.3.4.1 below).

6.3.4.1 Other Considerations

- **Norwood** - An instream flow is not required at the Norwood Development. However, the licensee shall provide a 20 cfs release for the purpose of providing a route of downstream movement for fish. The route of movement shall be through the stoplog section of the dam located adjacent to the left abutment of the dam.

- **Norfolk** - The licensee is required to maintain a total instream flow of 75 cfs below the confluence of the trash sluice return channel and the bypass reach (main channel of the Raquette River). The power canal transitions to a pipeline roughly halfway between the dam and powerhouse. The trashrack, trash sluice gate, and pipeline intake structure are located at this point. The trash sluice gate shall be considered the primary point of downstream fish movement. The trash sluice gate empties to a concrete flume which in turn empties into a rip-rap basin which ultimately drains into the bypass reach at approximately the halfway point. Approximately one half of the required 75 cfs shall be maintained through the trash sluice gate. Additionally, the licensee shall: (1) install the 1-inch protection device at the location of the existing trashracks at the transition of the power canal to pipeline, (2) provide an alternate route of movement via the trash sluice gate, (3) decrease flow velocities within the initial section of the trash sluice flume downstream of the trash sluice gate, via a small weir at the point where the flume converges to the uniform width of approximately 6.5 feet, (4) construct a plunge pool of adequate dimensions at the point where the trash sluice flume empties into the rip-rap basin, and (5) clear obstructions within the channel which drains the rip-rap basin into the bypass reach. The licensee will maintain the channel to be free of obstructions.

  The remaining component of the instream flow will be maintained within the upper reach of the bypass reach from the stoplog section near the middle of the dam and power canal headgates. The licensee shall not be required to provide safe fish movement and/or a plunge pool below this gate.

- **Raymondville** - An instream flow is not required at the Raymondville Development. However, the licensee shall provide at least a 20 cfs release for the purpose of providing a route of downstream movement for fish. The route of movement shall be through the trash sluice weir and/or low level sluice gate both located at the downstream end of the power canal near the powerhouse. Primary downstream movement shall be provided via the trash sluice weir. The low-level sluice may be used on a seasonal basis between mid-September and mid-October to allow for movement of outmigrating American eel. The licensee, at its own discretion, may provide a release greater than 20 cfs from either gate to facilitate provision of the required baseflow below Raymondville (see Section 5.3.3). Both the trash sluice and low-level sluice gates release into a pool adjacent to the powerhouse. The licensee shall make modifications as needed to ensure existence of a plunge pool of adequate depth for receipt of fish passed by the flow released.

6.4 EXCEPTIONS AND MONITORING

6.4.1 EXCEPTIONS

Allowances have been made to accommodate circumstances which necessitate the curtailment and/or suspension of the provision of downstream fish movement and/or protection measures at the thirteen developments. Reasons for same may include, but are not necessarily limited to, the following:

- Maintenance, repair, or reconstruction of project facilities at any hydroelectric project and/or water retaining structure on the Raquette River.

- Maintenance, repair, or reconstruction of nonproject facilities such as roads, bridges, or other structures in, or adjacent to, the river.

- Any emergency situations related to dam safety, human life and property, or rescue.

Curtailment or suspension of downstream fish movement and protection measures will be for the minimum duration necessary. Downstream fish movement and protection measures will be restored as soon as possible after the circumstance for which they have been curtailed or suspended is completed. The licensee may curtail or suspend provision of downstream fish movement and/or protection measures if either of the following criteria have been met:

- The Licensee must consult with appropriate NYSDEC staff in Watertown, NY regarding the need and approval to curtail or suspend provision of downstream fish movement and/or protection measures. It will be the responsibility of the NYSDEC to notify the USFWS (and the APA as needed) of the request. Documentation of the consultation with NYSDEC officials must describe the need for the curtailment and/or suspension, and specify the requested duration of the curtailment and/or suspension.

- If an emergency situation exists where consultation will only slow down or impair the Licensees' ability to address immediate dangers related to dam safety, human life and property, or rescue efforts, consultation with the NYSDEC will not be deemed necessary. However, the NYSDEC will be notified as soon as possible of the emergency situation.

6.4.2 MONITORING

The licensee shall not be required to monitor or measure the movement of fish through the designated movement points or turbines.

6.5 IMPLEMENTATION SCHEDULE

The licensee shall commence the installation of the downstream fish movement and protection measures specified in Section 6.3 as soon as control of the river is achieved in the year indicated for each development in Table 2-1.

7.0 RECREATION

7.1 INTRODUCTION

The Carry Falls and Upper Raquette River Hydroelectric Projects are being relicensed under a collaborative multi-project context. Studies to support this relicensing effort were conducted between 1995 and 1997. A recreation evaluation, *Upper Raquette River Hydroelectric Project (FERC No. 2084) and Carry Falls Project (FERC No. 2060) Recreation Resources Assessment* (ND&T, March 1997), was conducted in the summer of 1996 to evaluate existing recreational features and identify potential recreational enhancements. This study formed the basis for the recreational enhancement measures ultimately agreed upon within this Settlement for the Carry Falls and Upper Raquette River Hydroelectric Projects.

A vast array of studies has been conducted in support of the relicensing of the Middle and Lower Raquette River Hydroelectric Projects - both Class of 1993 projects. These include studies conducted prior to filing of the license applications between 1986 and 1991, as well as subsequent evaluations as part of 2nd and 3rd Stage Consultation and the settlement process. This array of studies and evaluations was used in determining recreational enhancement measures ultimately agreed upon within this Settlement for the Middle and Lower Raquette River Hydroelectric Projects. Studies conducted by the licensee in support of the Carry Falls, Upper Raquette River, Middle Raquette River, and Lower Raquette River Hydroelectric Projects are listed in Appendix 1.

7.2 GENERAL AGREEMENTS

7.2.1 ACCESS

Table 7-1 summarizes the existing recreation facilities of each development, as well as the additional facilities to be provided as part of this Settlement. The licensee shall only limit public access to facilities specifically related to hydroelectric generation including, but not necessarily limited to, dams, dikes, gates, intake structures, water conveyance structures, powerhouses, substations, transmission lines, and certain access roads leading to such facilities. The licensee shall continue to maintain the existing facilities listed in Table 7-1, as well as provide the additional facilities listed in Table 7-1 and detailed in Section 7.3.

Table 7-1
Raquette River
Summary of Existing and Proposed Recreation Facilities [a,d]

Site	Existing Facilities	Facilities Provided as Part of Settlement
Carry Falls	(1) Parmenter Campground - 16 campsites - restrooms - trailer accessible boat launch (2) Trailer accessible boat launch near dam	(1) Jordan River canoe portage (2) Carry Falls Dam canoe portage
Stark	(1) Multi-use area on the impoundment - picnic facilities - trailer accessible boat launch (2) Picnic area on bypass reach	(1) Canoe portage
Blake	(1) McNeil Campground - 58 campsites (two ADA accessible) - boat launches - supervised swimming beach - playground - restrooms (2) Trailer accessible boat launch	(1) Canoe portage (2) Dead Creek access
Rainbow	(1) Trailer accessible boat launch	(1) Canoe portage (2) Clear Pond Wild Forest trail (cooperative)
Five Falls	(1) Trailer accessible boat launch [b]	(1) Canoe portage
South Colton	(1) Trailer accessible boat launch (2) ADA fishing platform downstream of powerhouse	(1) Canoe portage
Higley	(1) Boat launch with parking area [c] (2) Picnic facilities [c]	(1) Canoe portage
Colton	(1) Stone Valley hiking trail system (cooperative) [c] (2) Car top boat launch with parking [c]	(1) Canoe portage (2) Whitewater access (3) Car top boat launch with overnight parking
Hannawa	none	(1) Canoe portage (2) Scenic overlook and picnic facilities (3) Red Sandstone trail - southern terminus (cooperative) (4) Whitewater access (5) Roadside parking
Sugar Island	none	(1) Canoe portage (2) Day use area (3) Red Sandstone trail - northern terminus (cooperative) (4) Whitewater access

Table 7-1 Raquette River Summary of Existing and Proposed Recreation Facilities [a]		
Site	**Existing Facilities**	**Facilities Provided as Part of Settlement**
Norwood	(1) ADA fishing platform (2) Boat launch and parking area (3) Picnic facilities	(1) Canoe portage
East Norfolk	none	(1) Canoe portage with parking (take-out only)
Norfolk	none	(1) Canoe portage (put-in only)
Raymondville	none	(1) Canoe portage (2) Car top boat launch and picnic facilities with parking

a. All existing facilities and facilities provided as part of settlement are planned to be operated under a "carry in - carry out" policy. However, the licensee will continue to provide trash facilities at the McNeil and Parmenter campsites.

b. At the Five Falls impoundment, the licensee shall make a good faith effort to enter into a Fish and Wildlife Management Act (FWMA), or similar agreement, with the NYSDEC that will institute a horsepower agreement on the impoundment, enforceable by NYSDEC, while still allowing the licensee necessary access and use for maintenance purposes.

c. This existing facility represents a recreation proposal constructed prior to issuance of license (see Middle Raquette River Project 2320 license application, Exhibit E.5 (iv)A.3.a&b).

d. Maps have been included at the end of this section which depict the general location of the existing recreational facilities and facilities included as part of settlement. Detailed maps will be provided as part of the development of the detailed recreation plan (see Section 7.2.2).

7.2.2 PLANNING

The description of the additional facilities provided in Section 7.3 are intended to provide a general identification and location of the facility. Detailed planning and siting of each facility shall occur prior to its construction. The licensee shall develop a recreation plan detailing the planning and siting of the additional recreational facilities. The plan for each project shall be completed within one year of license issuance of each project (see Section 2.2). The plan shall be circulated to the RRAC. Additional recreational facilities described in this Settlement for the Middle and Lower Raquette River Hydroelectric Projects are generally consistent with, but supersede, proposals contained in the license applications and subsequent AIR's for each project.

7.2.3 JUSTIFICATION

The existing recreational facilities on the Raquette River provide a significant opportunity for public access to , and use of, the impoundments, bypass reaches, and adjacent lands associated with the Carry Falls, Upper Raquette, Middle Raquette, and Lower Raquette River Hydroelectric Projects. The additional recreational facilities provided for by this settlement serve to supplement these existing facilities and to fill in the gaps where existing facilities do not exist, specifically at the Hannawa, Sugar Island, East Norfolk, Norfolk, and Raymondville Developments.

7.3 SPECIFIC TERMS OF SETTLEMENT

7.3.1 CARRY FALLS PROJECT No. 2060

- Jordan River Canoe Portage

The licensee shall provide a canoe portage between the Carry Falls Reservoir and the Jordan River which drains into Carry Falls Reservoir. The portage shall be located on lands of the licensee and/or New York State located inland from the right shore of the Jordan River. The portage trail shall connect the right shore of Carry Falls Reservoir with the Jordan River at the first bridge crossing located approximately 1.5 miles upstream of Carry Falls Reservoir. The licensee and NYSDEC shall ensure that appropriate directional signage is provided at each end of the trail and at intermediate junctions of wood roads.

- Carry Falls Dam Canoe Portage

The licensee shall provide a canoe portage around the Carry Falls Dam. The portage route shall connect the left shore of Carry Falls Reservoir to the left shore of the Stark impoundment and shall include appropriate directional signage.

7.3.2 UPPER RAQUETTE RIVER HYDROELECTRIC PROJECT No. 2084

7.3.2.1 Stark Development

- Canoe Portage

The licensee shall provide a canoe portage around the Stark Dam. The portage route shall connect the right shore of Stark impoundment (at the existing boat launch) to the Blake impoundment using existing roads and include appropriate directional signage.

7.3.2.2 Blake Development

- Canoe Portage

The licensee shall provide a canoe portage around the Blake Dam. The portage route shall connect the left shore of Blake impoundment to the left shore of the Rainbow impoundment and include appropriate directional signage.

- Dead Creek Access

The Dead Creek tributary enters the Blake bypass reach at approximately the halfway point of the bypass reach. Access to Dead Creek is possible via canoe from the Blake bypass reach, or by car via an un-named dirt road off of Joe Indian Road which leads to a bridge over Dead Creek (located approximately 2 miles upstream of the confluence with the Blake bypass reach). The licensee shall allow access to Dead Creek by both means. A cleared area adequate for parking presently exists on the un-named road approximately 100 yards before the bridge crossing. The licensee shall allow public access to this area to facilitate general access to Dead Creek. The licensee shall provide signage at Joe Indian Road designating the access to Dead Creek.

7.3.2.3 Rainbow Development

- Canoe Portage

The licensee shall provide a canoe portage around the Rainbow Dam. The portage route shall connect the left shore of Rainbow impoundment to the left shore of the Five Falls impoundment and include appropriate directional signage.

- Clear Pond Wild Forest Trail

The Clear Pond Wild Forest is a state owned forest preserve located approximately 0.3 miles from the right shore of the Rainbow impoundment. In conjunction with the ADK, and/or others as appropriate, the licensee shall provide a primitive access trail to these lands via a landing in a small bay on the right shore of the Rainbow impoundment near Dike 2. To maintain the primitive nature of the area, the licensee shall keep site improvements at the landing and trailhead to a minimum.

7.3.2.4 Five Falls Development

- Canoe Portage

The licensee shall provide a canoe portage around the Five Falls Dam. The portage route shall connect the left shore of Five Falls impoundment to the left shore of the South Colton impoundment and include appropriate directional signage.

7.3.2.5 South Colton Development

- Canoe Portage

The licensee shall provide a canoe portage around the South Colton Dam. The portage route shall connect the left shore of South Colton impoundment to the left shore of the riverine reach below South Colton near the South Colton USGS gage. The licensee shall include appropriate directional signage and safety signage warning of fast rising waters as well as downstream whitewater associated with use of the put-in.

7.3.3 MIDDLE RAQUETTE RIVER HYDROELECTRIC PROJECT No. 2320

7.3.3.1 Higley Development

- Canoe Portage

The licensee shall provide a canoe portage around the Higley Dam beginning at the existing picnic area (Big Rock Park) including appropriate directional signage.

7.3.3.2 Colton Development

- Canoe Portage

The licensee shall provide a canoe portage around the Colton Dam. The portage will lead to an upper, whitewater put-in within the bypassed reach, and will continue along the pipeline road to a second put-in below the bypassed reach. Appropriate directional signage will be included.

- Car Top Boat Launch with Overnight Parking

The licensee shall provide a car top boat launch with overnight parking in the vicinity of Browns Bridge located immediately downstream of the Colton tailrace.

- Whitewater Access

Whitewater access shall be provided as specified in Section 8.3.3.1.

7.3.3.3 Hannawa Development

- Canoe Portage

The licensee shall provide a canoe portage around the Hannawa Dam including appropriate directional signage. The canoe portage will follow the Red Sandstone trail until diverting to the put-in location (see below).

- Red Sandstone Trail - Southern Terminus

In conjunction with the Laurentian Chapter of the ADK (and others as appropriate), the licensee shall develop a trail to be known as the Red Sandstone Trail. The southern terminus of this trail shall be located near the Hannawa Dam coincident with the canoe take-out. The trail will extend northward to the Sugar Island Development. The southern portion of the trail and the Hannawa canoe portage will follow the same route.

- Scenic Overlook and Picnic Facilities

In conjunction with the development of the southern terminus of the Red Sandstone Trail, the licensee shall develop a scenic overlook and picnic facilities. The scenic overlook shall be located at a point so as to provide viewing of the falls and gorge which make up the upper stretch of the Hannawa bypass reach. The picnic facilities shall be located in the vicinity of the Hannawa Dam.

- Whitewater Access

Whitewater access shall be provided as specified in Section 8.3.3.2.

- Roadside Parking

To facilitate usage of the above mentioned facilities, the licensee shall develop a roadside parking area in the vicinity of the Hannawa Dam off Mill Street.

7.3.3.4 Sugar Island Development

- Canoe Portage

The licensee shall provide a canoe portage around the Sugar Island Dam including appropriate directional signage. The take out will be located along the left shore of the impoundment upstream of the dam. The portage put-in will also serve as the whitewater put-in, and will include a footbridge over the pipeline plus a trail to the launch point on the left shore of the bypassed reach.

- Day Use Area

The licensee shall develop a day use area with gated access on the large peninsula towards the downstream end of the bypass reach called Sugar Island (also known as Allen's Island). The day use area shall consist of a hiking trail, picnic area, and canoe access. Parking for the day use area will be provided in the vicinity of the powerhouse. The gate allowing access will be closed at night.

- Red Sandstone Trail - Northern Terminus

In conjunction with the Laurentian Chapter of the ADK (and others as appropriate), the licensee shall develop a trail known as the Red Sandstone Trail. The southern terminus of this trail shall be located near the Hannawa Dam. The trail will extend northward from the Hannawa Development following portions of the Hannawa canoe portage. The trail will ultimately pass between the Sugar Island impoundment and Greystone Materials, Inc.'s, sandstone quarry, finally merging with the Sugar Island canoe portage route. The portage will serve as the northern terminus of the trail. Further northward development of the trail towards the Village of Potsdam shall not be required of the licensee.

- Whitewater Access

Whitewater access shall be provided as specified in Section 8.3.3.3.

7.3.4 LOWER RAQUETTE RIVER HYDROELECTRIC PROJECT No. 2330

7.3.4.1 Norwood Development

- Canoe Portage

The licensee shall provide a canoe portage around the Norwood Dam on river right including appropriate directional signage.

7.3.4.2 East Norfolk Development

- Canoe Portage with Parking

The licensee shall provide a canoe take-out at the East Norfolk impoundment. This take-out will lead to a portage route which will bypass both the East Norfolk and Norfolk dams. The take-out area will have adequate parking for several vehicles. The next put-in shall be located in the Norfolk bypass reach (see 7.3.4.3) . The canoe portage route shall utilize a combination of trails and public roadways, and shall include all appropriate directional signage.

7.3.4.3 Norfolk Development

- Canoe Portage

The licensee shall provide a canoe put-in within the bypass reach of the Norfolk Development. This put-in shall serve as the terminus of the take-out and portage route from the East Norfolk impoundment (see 7.3.4.2 above).

7.3.4.4 Raymondville Development

- Canoe Portage

The licensee shall provide a canoe portage around the Raymondville Dam on river left including appropriate directional signage.

- Car Top Boat Launch and Picnic Facilities

The licensee shall develop a car top boat launch and picnic facilities adjacent to the Raymondville impoundment near the left abutment of the dam. This facility shall include parking.

7.4 EXCEPTIONS AND MONITORING

7.4.1 EXCEPTIONS

Vandalism and destruction is a recognized threat to the existing and additional recreational facilities included as part of this Settlement. If vandalism becomes commonplace, the licensee will present the scope of the problem to the RRAC. The licensee will work with the RRAC to explore measures to address the problem. If the problem persists, the licensee may petition the RRAC to concur with permanently shutting down the facility in question. If the RRAC does not concur and the problem persists, the licensee may consult with FERC in order to address the issue.

The licensee may temporarily shut down any recreational facility. Reasons for same may include, but are not necessarily limited to, the following:

- Maintenance, repair, or reconstruction of project facilities at any hydroelectric project and/or water retaining structure on the Raquette River.

- Maintenance, repair, or reconstruction of nonproject facilities such as roads, bridges, or other structures in, or adjacent to, the river.

- Any emergency situations related to dam safety, human life and property, or rescue.

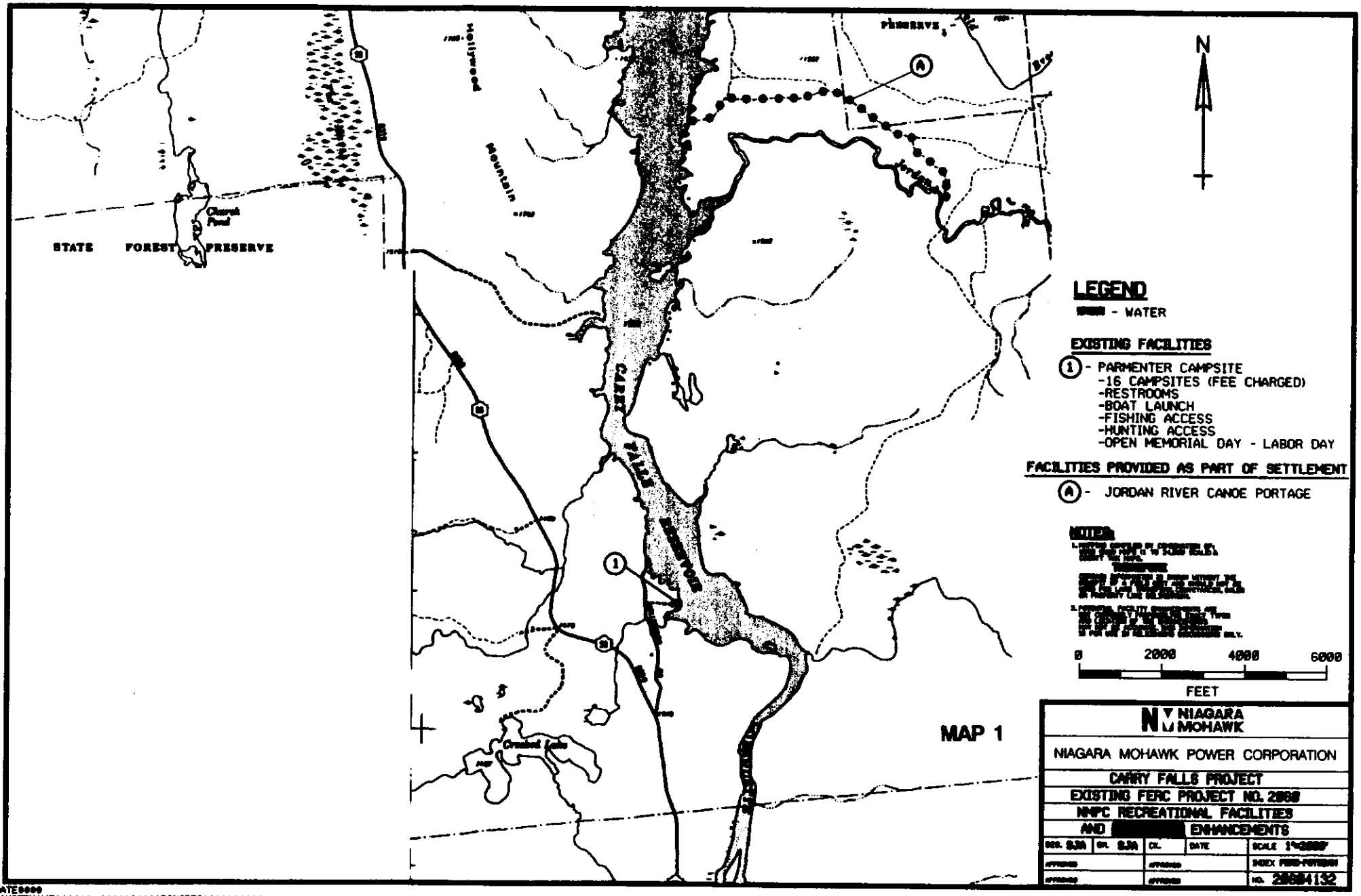
Temporary shut down of any recreational facilities will be for the minimum duration necessary. Normal operation of the recreational facilities will be restored as soon as possible after the circumstance requiring the shut down is completed.

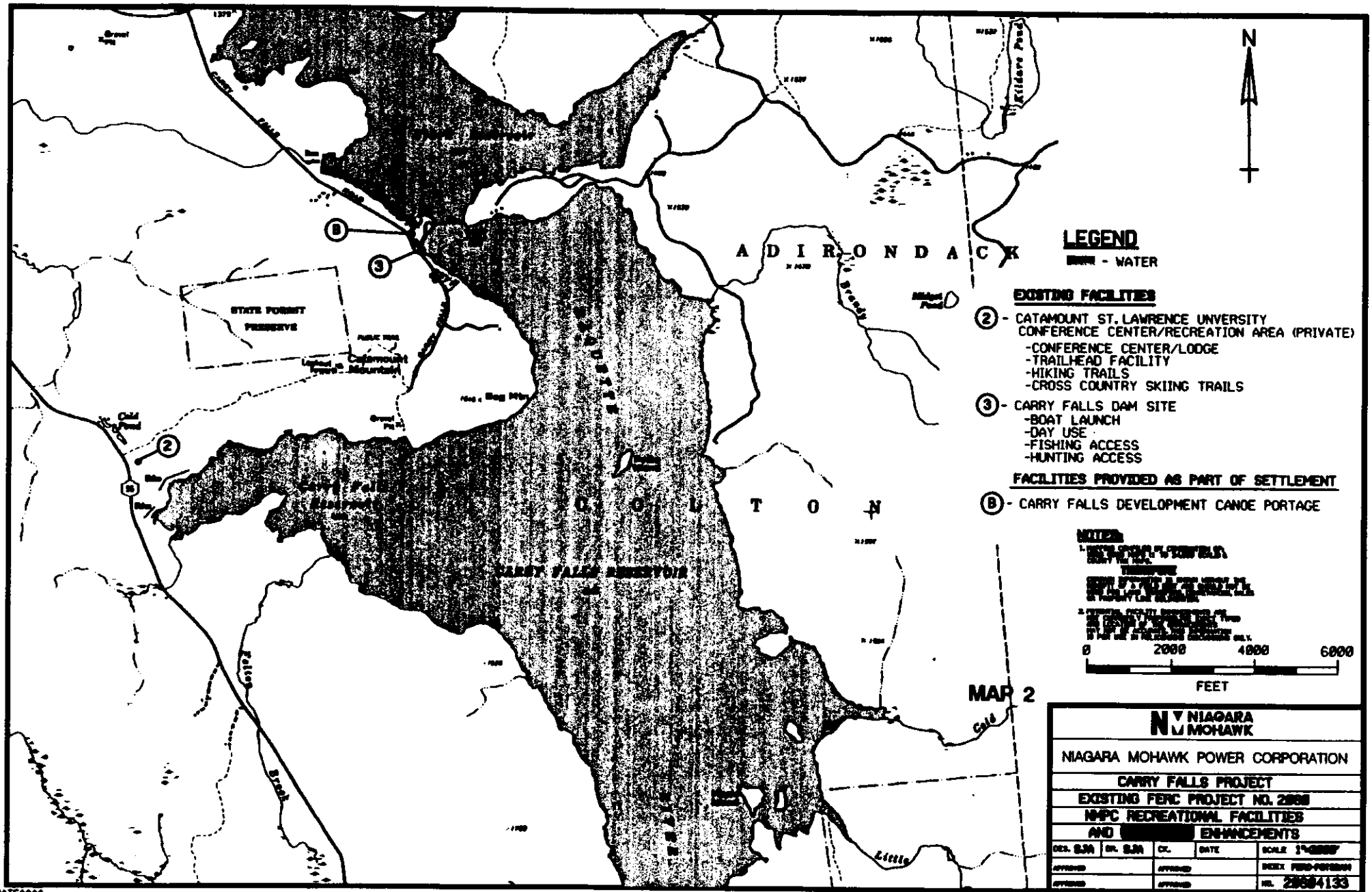
7.4.2 MONITORING

The licensee shall only be required to monitor the usage of recreational facilities as required by 18 CFR, Subchapter B, Part 8, § 8.11 governing the submittal of the FERC Form 80 documenting usage of recreational facilities.

7.5 IMPLEMENTATION SCHEDULE

The licensee shall construct or otherwise implement all recreational facilities described in Section 7.3 according to Table 2-1.


STATE FOREST PRESERVE
Hollowood Mountain
CARRY FALLS RESERVOIR
Crooked Lake
N
LEGEND
- WATER
EXISTING FACILITIES
(1) - PARMENTER CAMPSITE
-16 CAMPSITES (FEE CHARGED)
-RESTROOMS
-BOAT LAUNCH
-FISHING ACCESS
-HUNTING ACCESS
-OPEN MEMORIAL DAY - LABOR DAY
FACILITIES PROVIDED AS PART OF SETTLEMENT
(A) - JORDAN RIVER CANOE PORTAGE
0 2000 4000 6000
FEET
MAP 1
NIAGARA MOHAWK
NIAGARA MOHAWK POWER CORPORATION
CARRY FALLS PROJECT
EXISTING FERC PROJECT NO. 2000
NMPC RECREATIONAL FACILITIES
AND ENHANCEMENTS
DATE
USERNAME DGNSPEC



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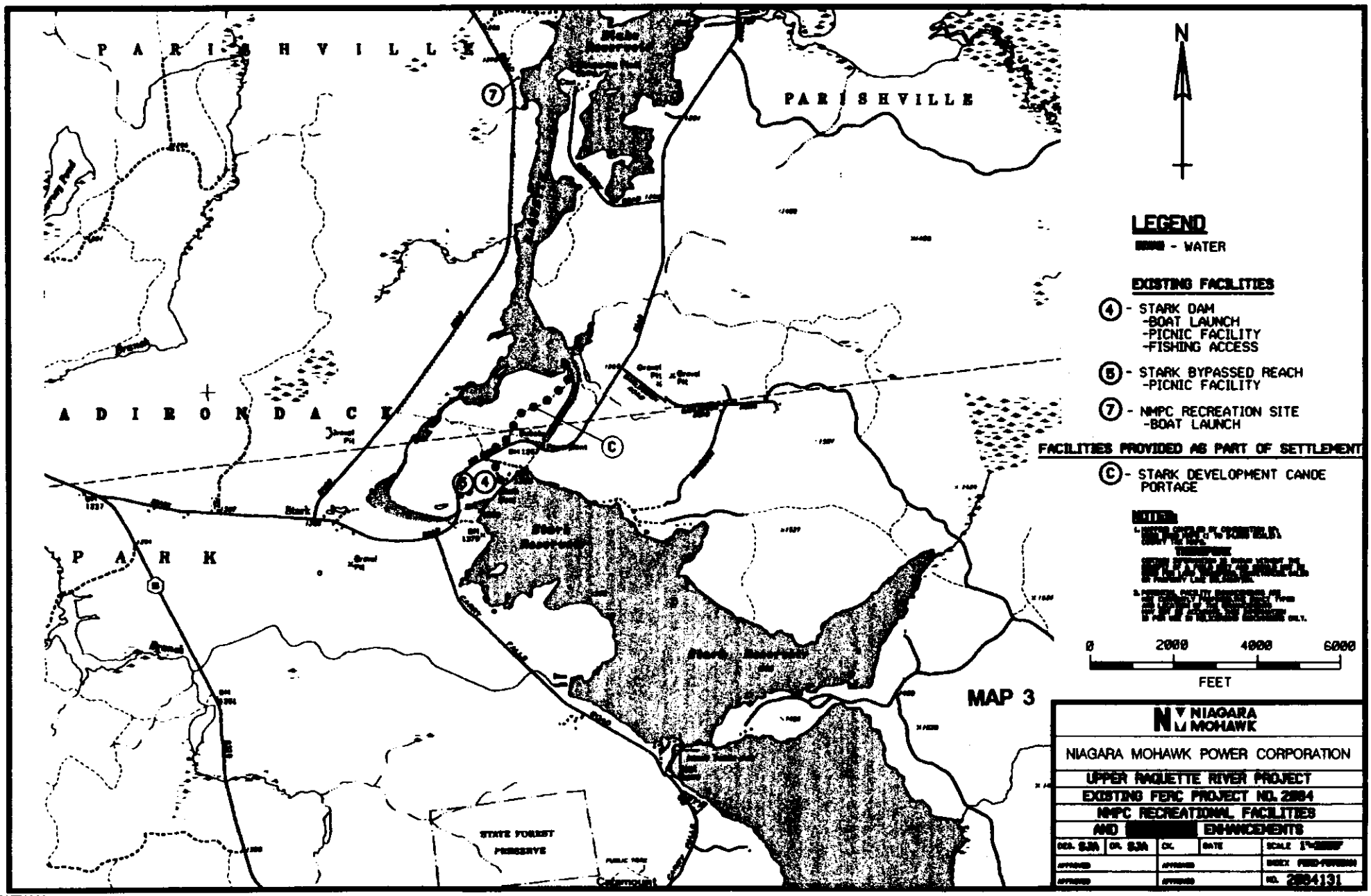
◆◆◆◆USERNAME◆◆◆◆◆◆ ◆◆◆◆◆◆◆◆◆◆DGNSPEC◆◆◆◆◆◆◆◆◆◆



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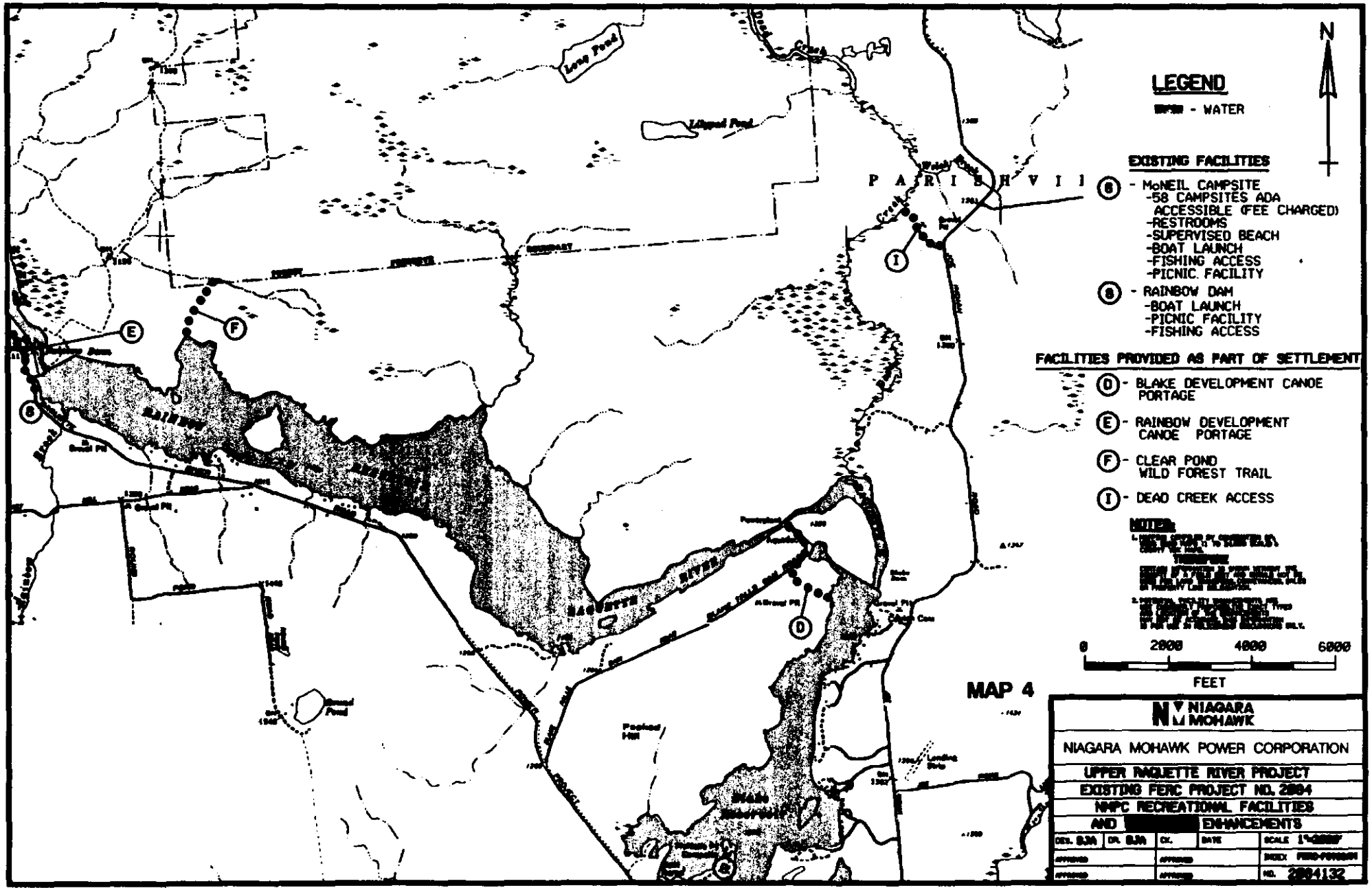
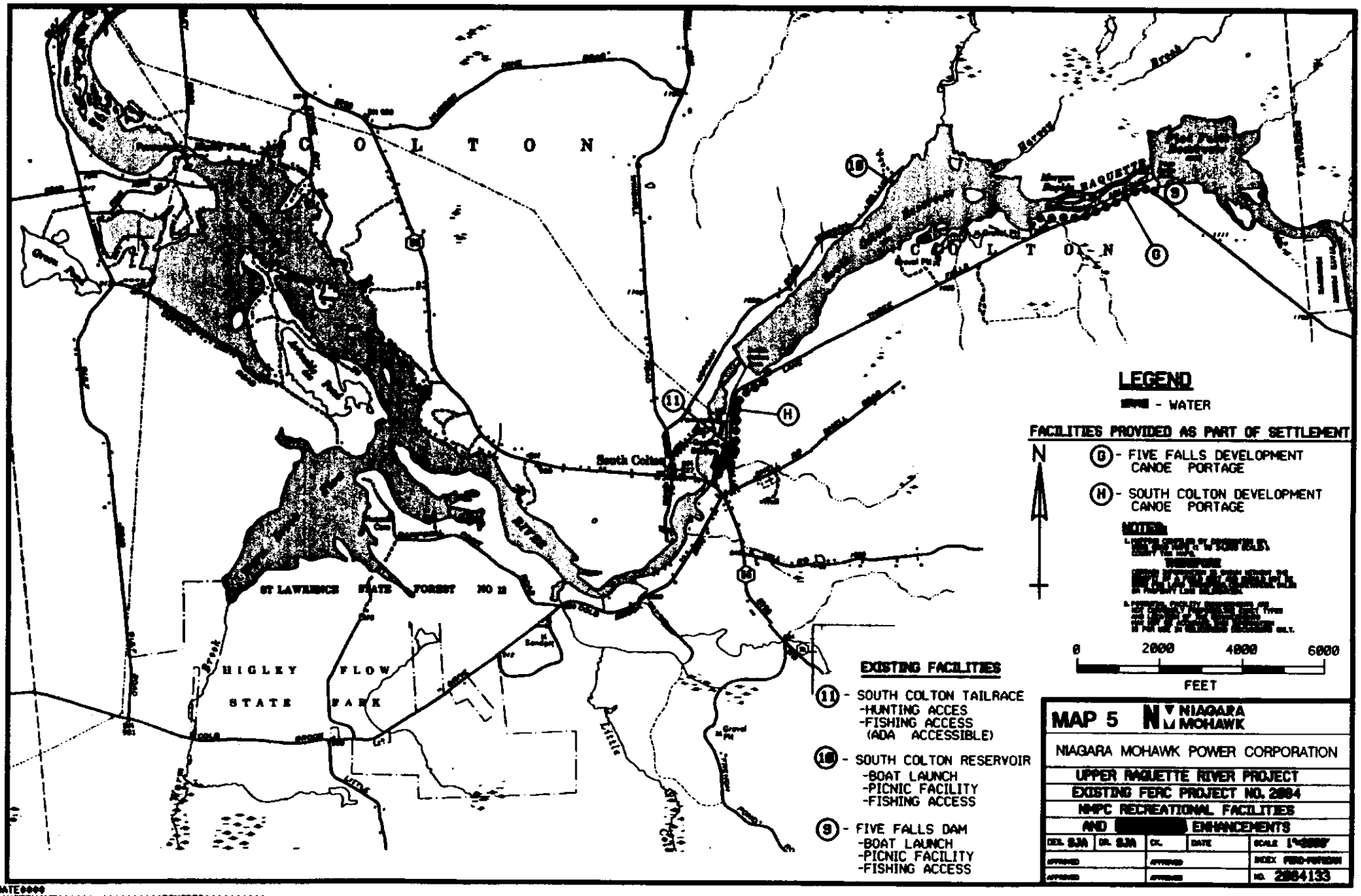
USERNAME DGNSPEC


LEGEND
- WATER
EXISTING FACILITIES
(B) - McNEIL CAMPSITE
-58 CAMPSITES ADA ACCESSIBLE (FEE CHARGED)
-RESTROOMS
-SUPERVISED BEACH
-BOAT LAUNCH
-FISHING ACCESS
-PICNIC FACILITY
(B) - RAINBOW DAM
-BOAT LAUNCH
-PICNIC FACILITY
-FISHING ACCESS
FACILITIES PROVIDED AS PART OF SETTLEMENT
(D) - BLAKE DEVELOPMENT CANOE PORTAGE
(E) - RAINBOW DEVELOPMENT CANOE PORTAGE
(F) - CLEAR POND WILD FOREST TRAIL
(I) - DEAD CREEK ACCESS
N
0 2000 4000 6000
FEET
MAP 4
NIAGARA MOHAWK
NIAGARA MOHAWK POWER CORPORATION
UPPER RAQUETTE RIVER PROJECT
EXISTING FERC PROJECT NO. 2894
NMPC RECREATIONAL FACILITIES
AND ENHANCEMENTS
NO. 2894132



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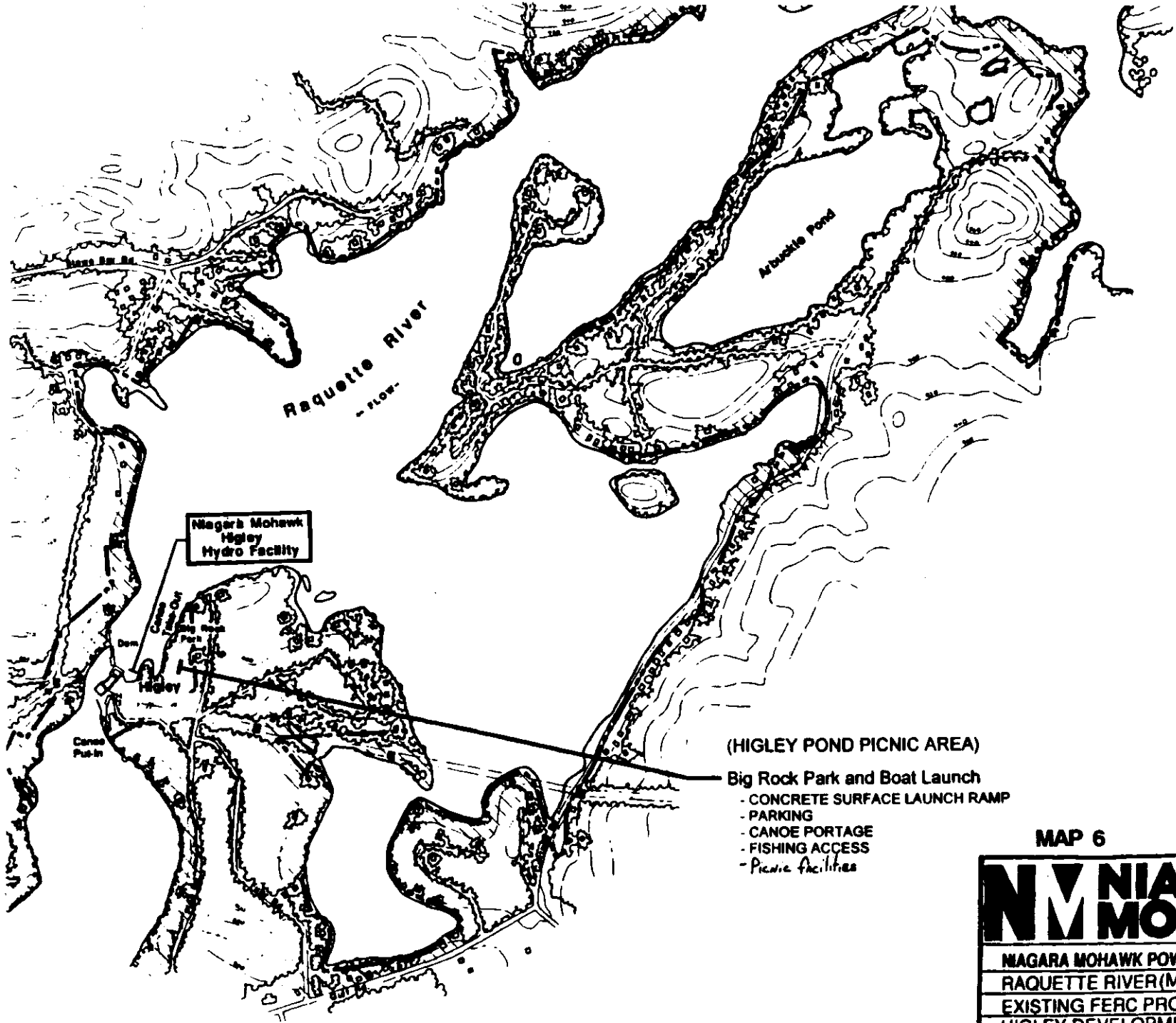


MAP 6

NIAGARA MOHAWK

NIAGARA MOHAWK POWER CORPORATION SYRACUSE, N.Y.

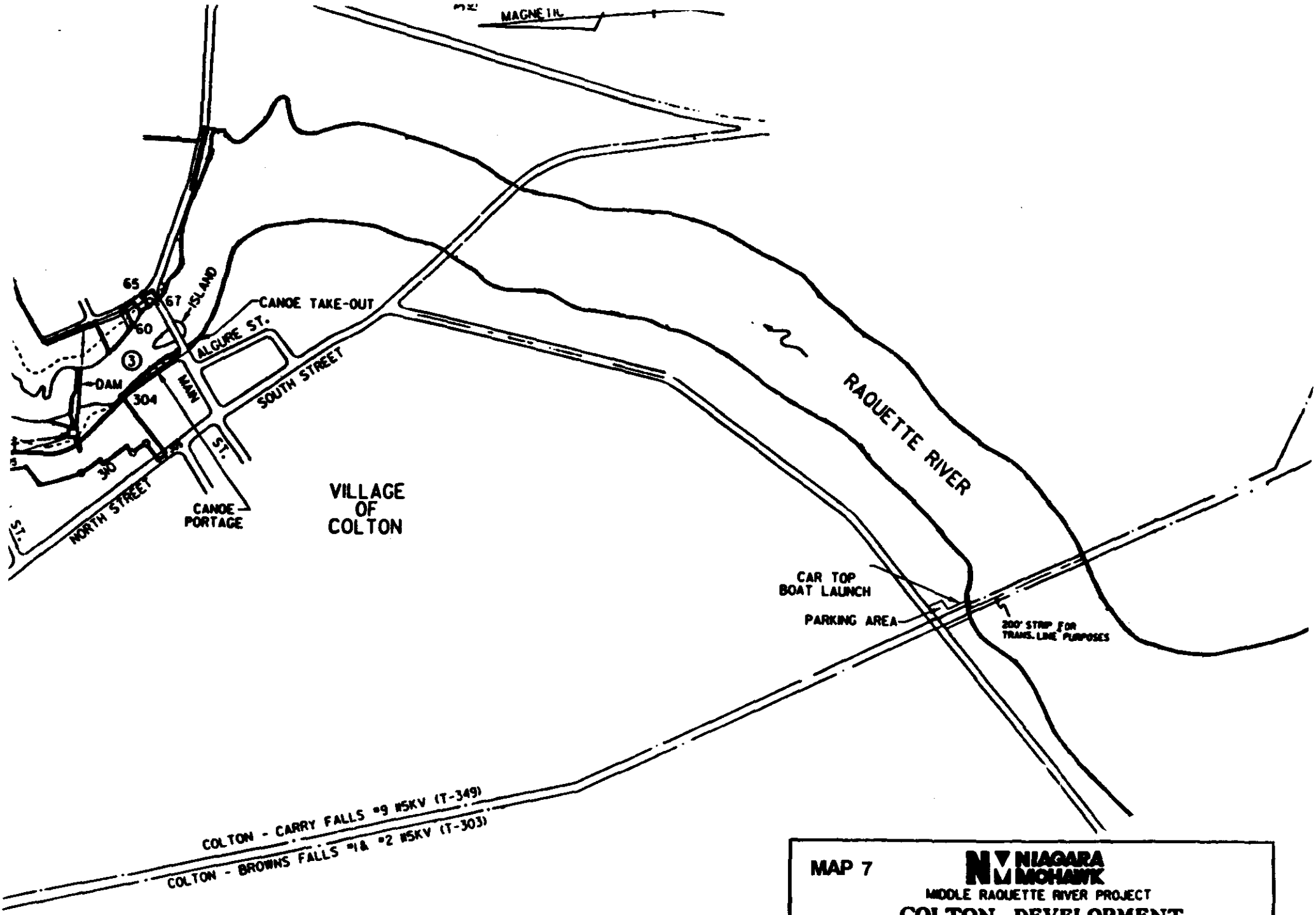
RAQUETTE RIVER(MIDDLE) HYDRO PROJECT

EXISTING FERC PROJECT NO. 2320

HIGLEY DEVELOPMENT

PROPOSED RECREATIONAL PLAN

				CABINET:FERC-POTSDAM
SHEET 4 OF 4				ITEM NAME:2320REC4



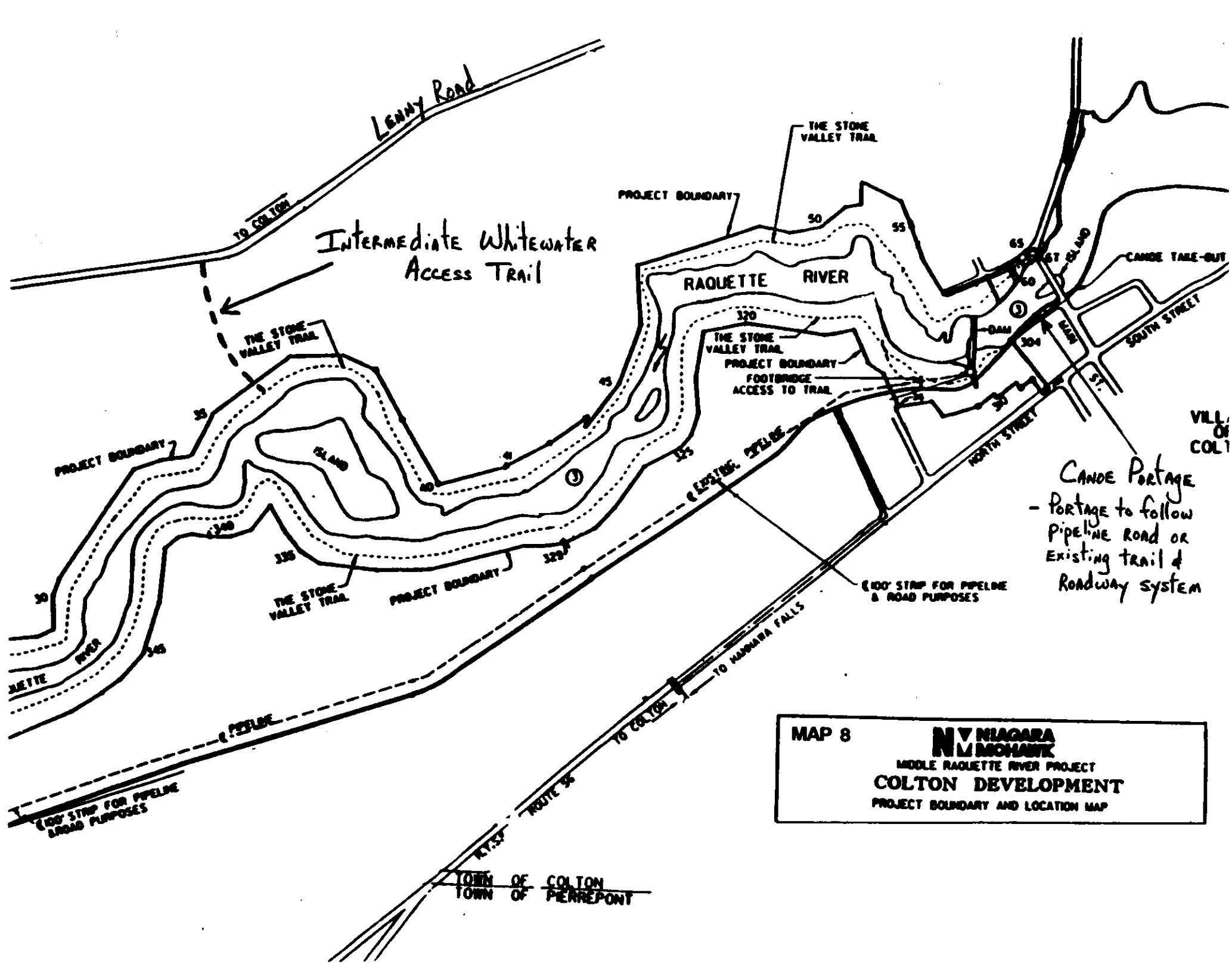
MAP 7

NIAGARA MOHAWK

MIDDLE RAQUETTE RIVER PROJECT

COLTON DEVELOPMENT

PROJECT BOUNDARY AND LOCATION MAP



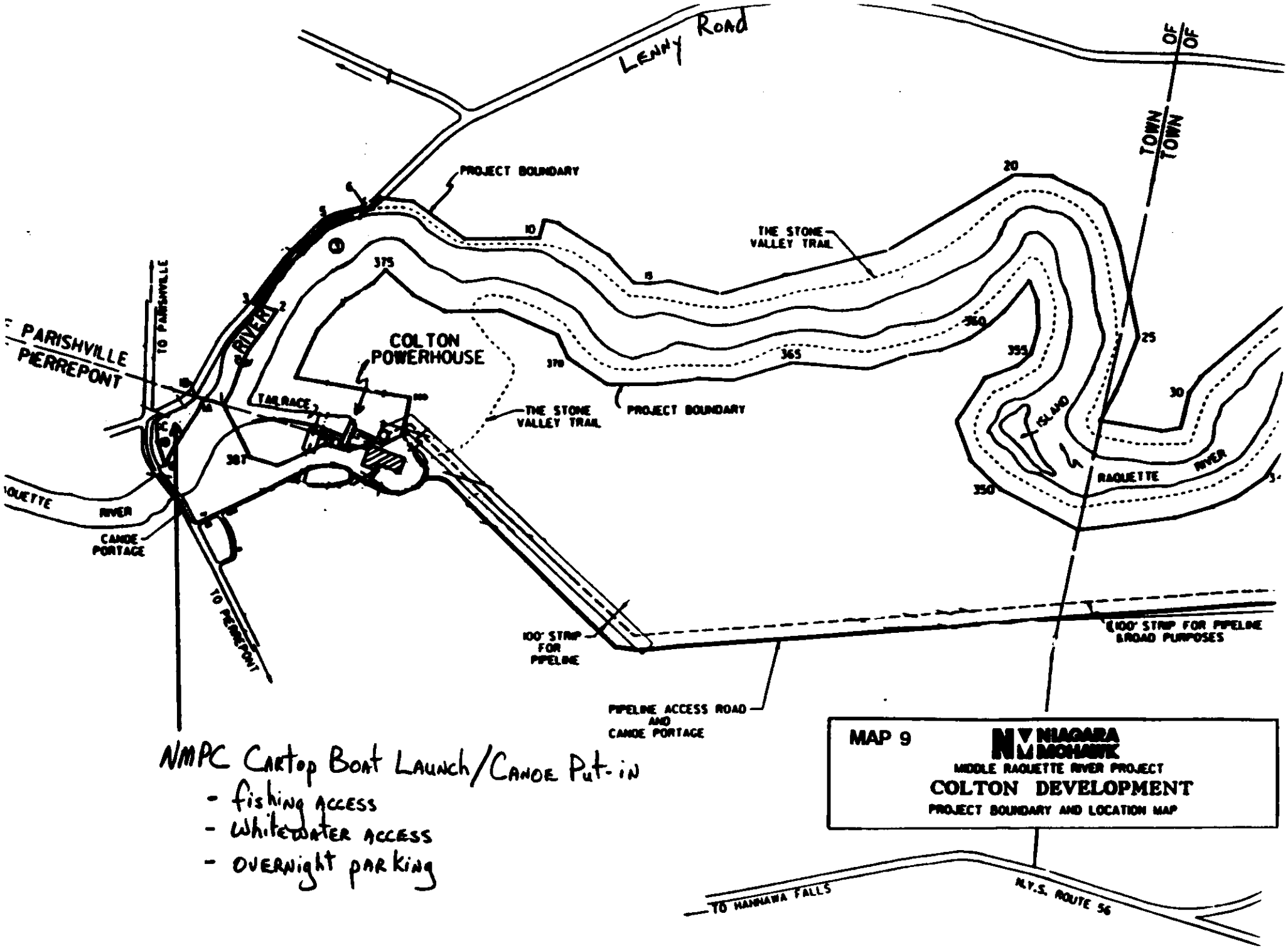
MAP 8

NIAGARA MOHAWK

MIDDLE RAQUETTE RIVER PROJECT

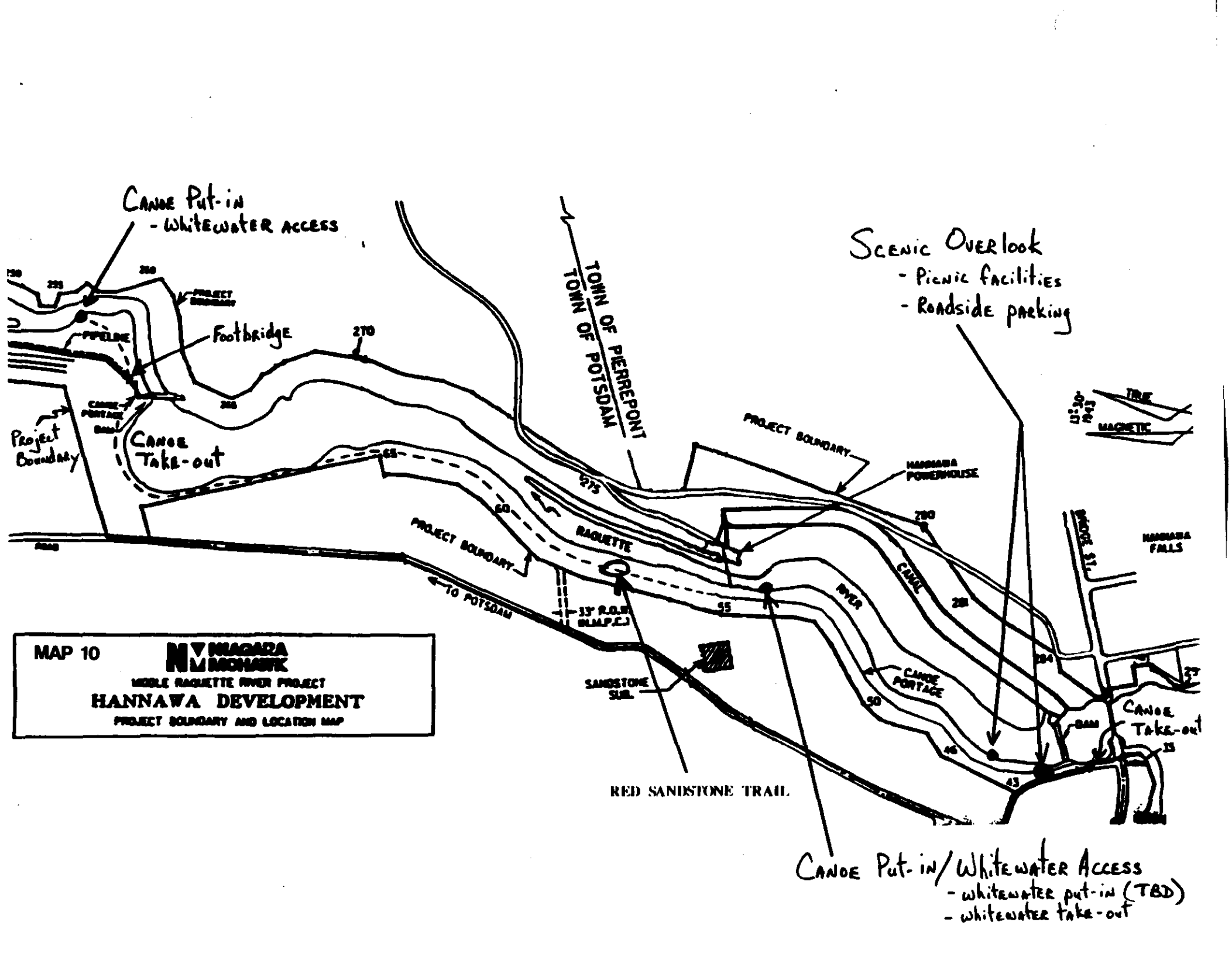
COLTON DEVELOPMENT

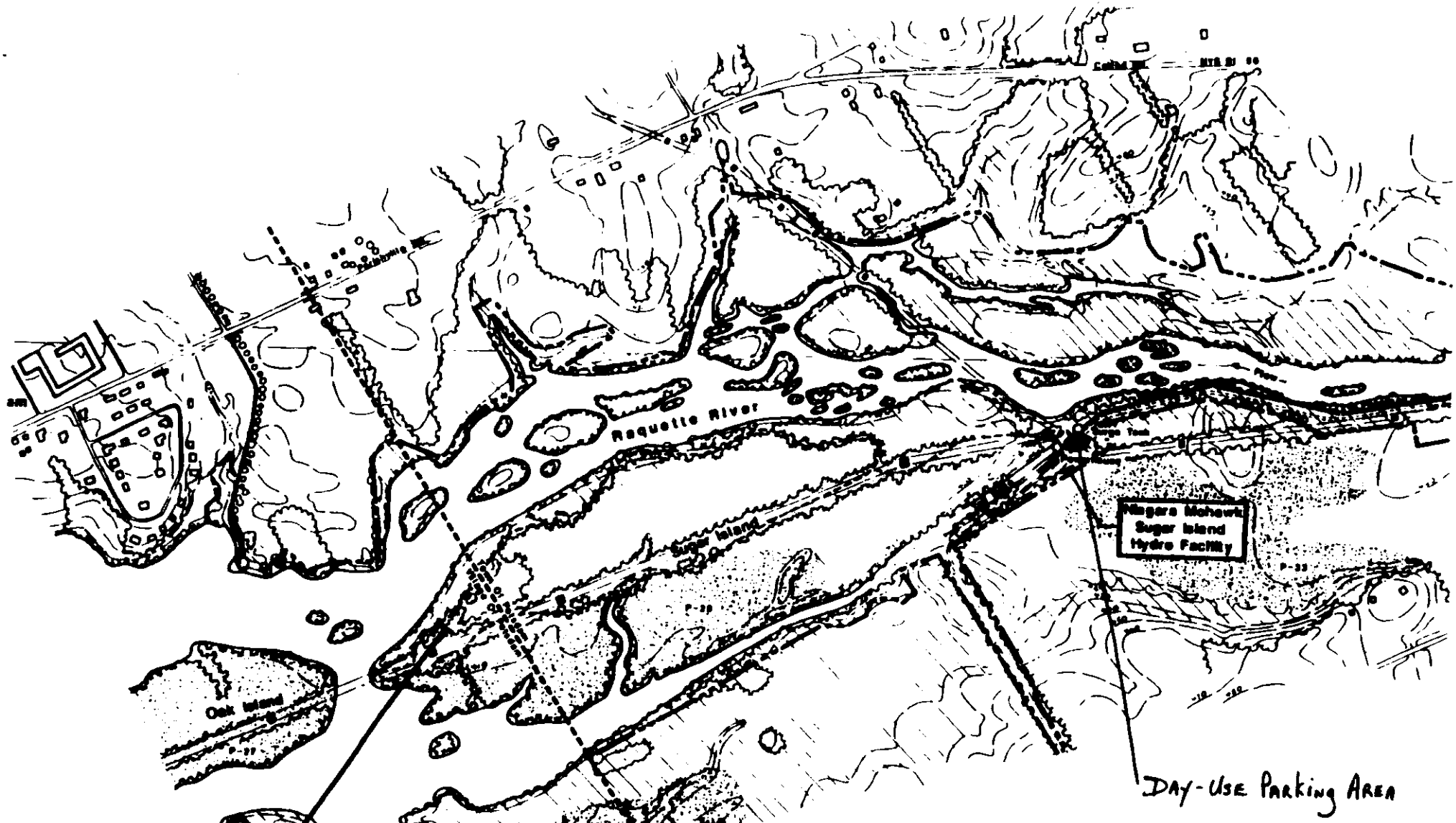
PROJECT BOUNDARY AND LOCATION MAP



NMPC Cartop Boat Launch/Canoe Put-in

- fishing access
- whitewater access
- overnight parking


Canoe Put-in
- Whitewater access
Footbridge
Project Boundary
Canoe Take-out
TOWN OF POTSDAM
TOWN OF PIERREPONT
Scenic Overlook
- Picnic facilities
- Roadside parking
PROJECT BOUNDARY
HANNAWA POWERHOUSE
RAQUETTE
CANAL
RIVER
BRIDGE ST.
HANNAWA FALLS
TRUE
MAGNETIC
TO POTSDAM
33' R.O.W. (U.M.P.C.)
SANDSTONE SUR.
CANOE PORTAGE
DAM
RED SANDSTONE TRAIL
Canoe Put-in/Whitewater Access
- whitewater put-in (TBD)
- whitewater take-out
MAP 10
NIAGARA MOHAWK
MIDDLE RAQUETTE RIVER PROJECT
HANNAWA DEVELOPMENT
PROJECT BOUNDARY AND LOCATION MAP



Day-Use Area

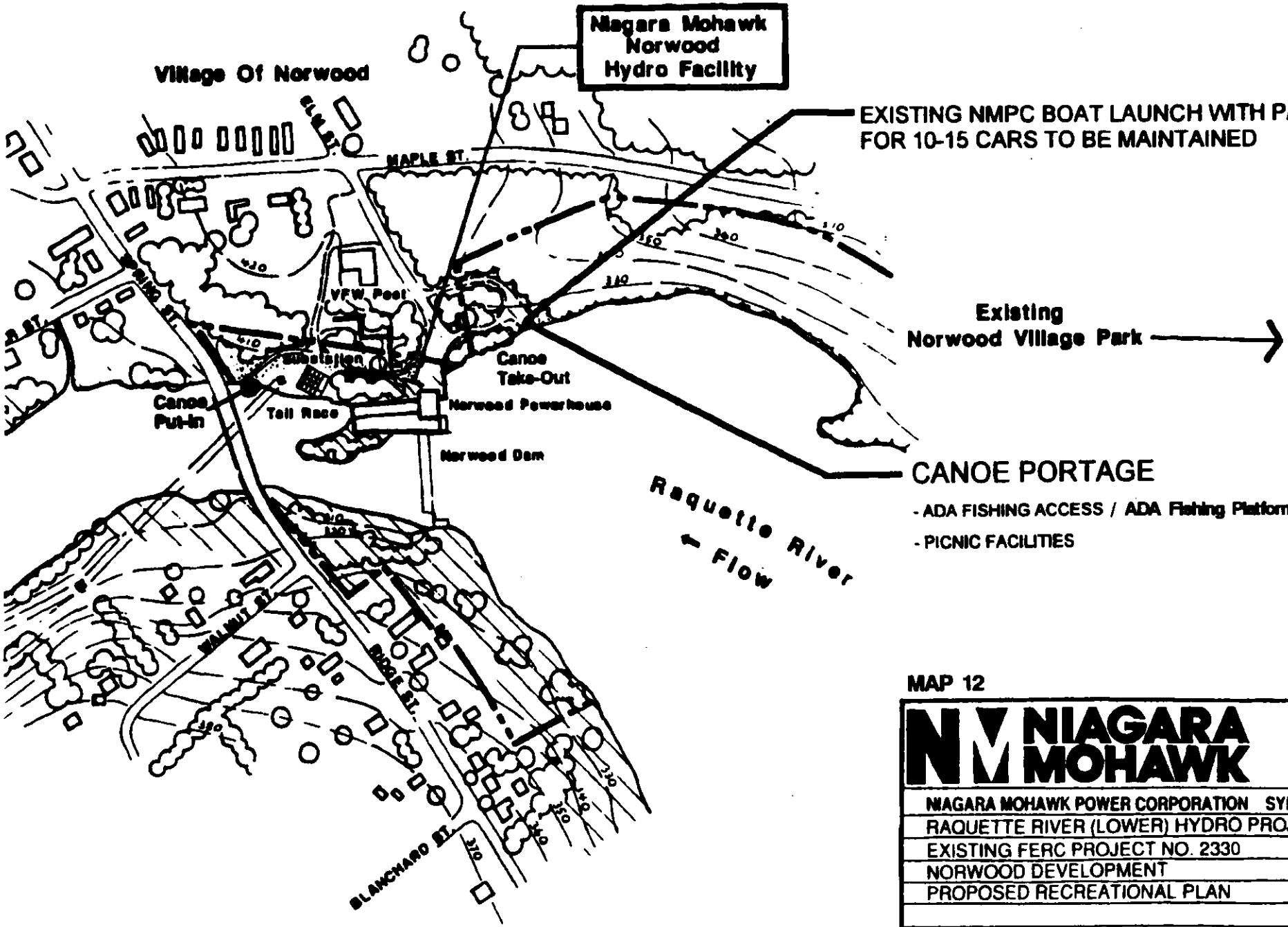
- Canoe Access
- Picnic Facilities
- Fishing Access
- Hiking Trail(s)

MAP 11

NIAGARA MOHAWK

NIAGARA MOHAWK POWER CORPORATION SYRACUSE, N.Y.
RAQUETTE RIVER (MIDDLE) HYDRO PROJECT
EXISTING FERC PROJECT NO. 2320
SUGAR ISLAND DEVELOPMENT
PROPOSED RECREATIONAL PLAN

T:FERC-POTSDAM
SHEET 1 OF 4
ITEM NAME: 2320RECL



MAP 12

NIAGARA MOHAWK

NIAGARA MOHAWK POWER CORPORATION SYRACUSE, N.Y.

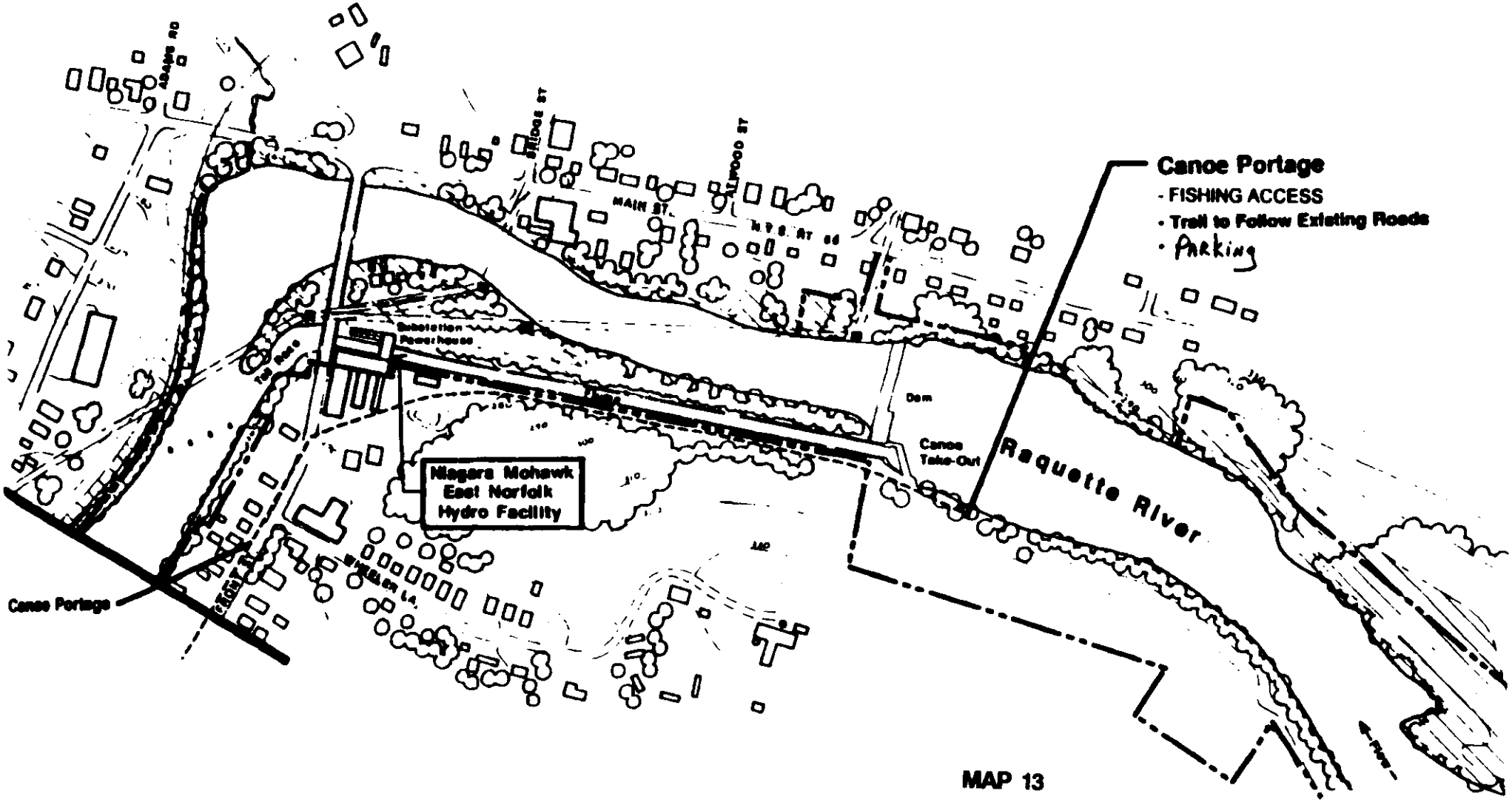
RAQUETTE RIVER (LOWER) HYDRO PROJECT

EXISTING FERC PROJECT NO. 2330

NORWOOD DEVELOPMENT

PROPOSED RECREATIONAL PLAN

				CABINET:FERC-POTSDAM
SHEET 4 FINAL				ITEM NAME:2330REC4



MAP 13

NIAGARA MOHAWK

NIAGARA MOHAWK POWER CORPORATION SYRACUSE, N.Y.

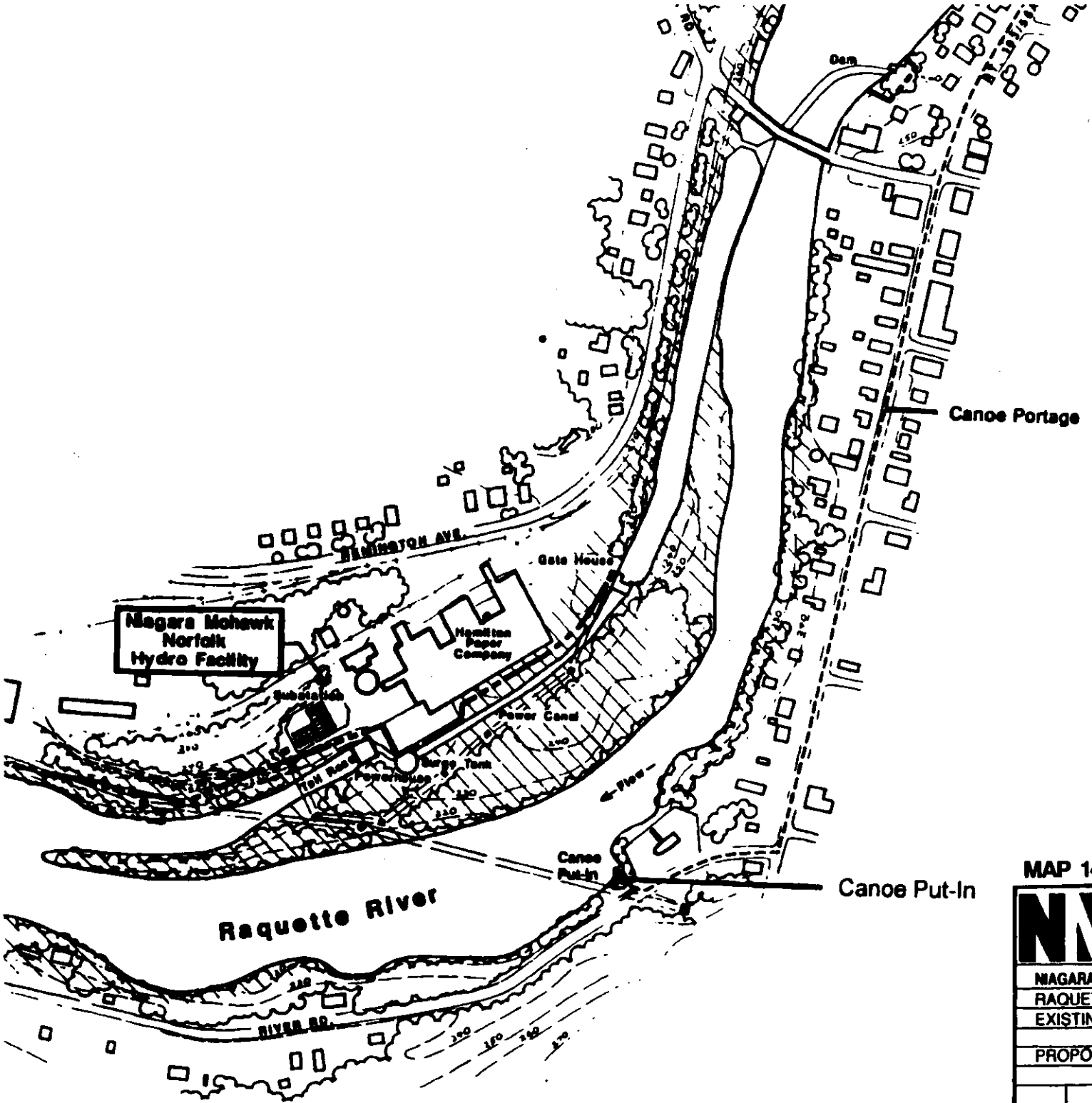
RAQUETTE RIVER (LOWER) HYDRO PROJECT

EXISTING FERC PROJECT NO. 2330

EAST NORFOLK DEVELOPMENT

PROPOSED RECREATIONAL PLAN

				CAD	FERC-POTSDAM
SHEET 3 CONT'D ON 4				ITEM NAME:	2330REC3



MAP 14

NIAGARA MOHAWK

NIAGARA MOHAWK POWER CORPORATION SYRACUSE, N.Y.

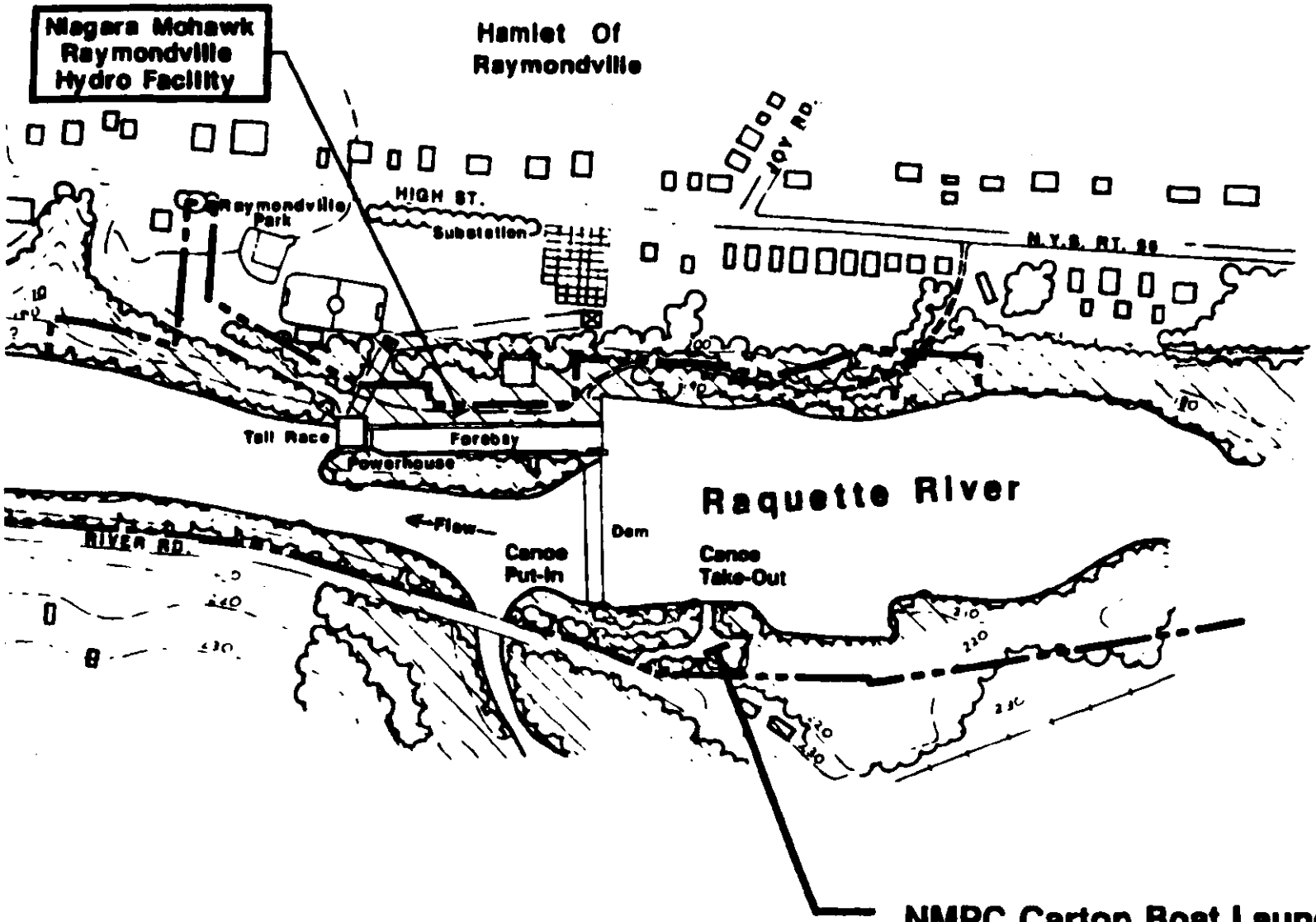
RAQUETTE RIVER (LOWER) HYDRO PROJECT

EXISTING FERC PROJECT NO. 2330

NORFOLK DEVELOPMENT

PROPOSED RECREATIONAL PLAN

				CABINET:FERC-POTSDAM
SHEET 2 CONT'D ON 3				ITEM NAME:2330REC2



NMPC Cartop Boat Launch

- FISHING ACCESS
- PARKING
- Picnic facilities

MAP 15

NIAGARA MOHAWK

NIAGARA MOHAWK POWER CORPORATION SYRACUSE, N.Y.
RAQUETTE RIVER (LOWER) HYDRO PROJECT
EXISTING FERC PROJECT NO. 2330
RAYMONDVILLE DEVELOPMENT
PROPOSED RECREATIONAL PLAN

NET#FERC-POTSDAM

8.0 WHITEWATER

8.1 INTRODUCTION

A vast array of studies has been conducted in support of the relicensing of the Middle and Lower Raquette River Hydroelectric Projects - both Class of 1993 projects. These include studies conducted prior to filing of the license applications between 1986 and 1991, as well as subsequent evaluations as part of 2nd and 3 rd Stage Consultation and the settlement process. In particular, paddling feasibility studies were conducted at the Colton Development (June 1993) and at the Hannawa and Sugar Island Developments (July 1994) to evaluate various whitewater releases. These studies, in conjunction with the settlement process, were used in determining whitewater releases and measures ultimately agreed upon within this Settlement. Studies conducted by the licensee in support of the Carry Falls, Upper Raquette, Middle Raquette, and Lower Raquette River Hydroelectric Projects are listed in Appendix 1.

The overarching finding of the studies conducted, and collective acknowledgment of the signators, is that the Colton bypass reach is highly valued by the whitewater community as representing the greatest potential whitewater experience for the intermediate to advanced paddler. As such, the entire scheme for providing scheduled whitewater releases (see below) is premised on the anticipated desire for annual releases at the Colton Development.

8.2 GENERAL AGREEMENTS

The licensee shall allow for scheduled whitewater releases at the Colton, Hannawa, and/or Sugar Island Developments of the Middle Raquette River Hydroelectric Project. The number and volume of the releases shall be based upon the annual energy loss associated with the releases (whitewater budget). A whitewater subcommittee of the Raquette River Advisory Council (RRAC; see Section 8.3.1 and Appendix 2) shall meet at least once by February 1st of each year to determine how to schedule and allocate the whitewater budget among the three developments.

The licensee shall maintain a flow notification system for the purpose of providing the public with information regarding scheduled releases and/or known spillage events at the Colton, Hannawa, and Sugar Island Developments. To achieve this requirement, the licensee shall develop an Internet web page as one medium to provide this information. Additionally, the licensee will maintain a dial-up phone system providing verbal flow information as an alternate medium.

8.3 SPECIFIC TERMS OF SETTLEMENT

8.3.1 WHITEWATER SUBCOMMITTEE

In conjunction with the formation of the Raquette River Advisory Council (RRAC - see Appendix 2), a whitewater subcommittee of the RRAC (Subcommittee) shall be formed. At a minimum, the Subcommittee shall consist of the following members of the RRAC: (1) the licensee, (2) AWA, (3) ADK, (4) NYSDEC, (5) a representative of local boater interests, and (6) a representative of local government. Any member of the RRAC may elect to participate on the Subcommittee each year, or only during specific years. In general, the Subcommittee is charged with the responsibility of developing a whitewater release schedule which meets the specifications of Section 8.3.2.

8.3.1.1 Annual Activities

- The Subcommittee shall meet at least once by February 1st of each year to determine allocation of the whitewater budget among the Colton, Hannawa, and Sugar Island Developments during the upcoming scheduled whitewater season. The licensee shall be responsible for initiating this meeting.

- The Subcommittee will determine: (1) which developments will receive scheduled releases, (2) the dates of the scheduled releases, and (3) the type of scheduled release (full day, half day, evening). The Subcommittee shall be responsible for developing a whitewater release schedule that meets the constraints specified in Section 8.3.2.1

- The Subcommittee may elect to review the ramping rates specified in Section 8.3.2.2. If the NYSDEC and USFWS are not represented on the Subcommittee during a given year, modifications to the ramping rates shall be subject to the review and approval of the NYSDEC and USFWS.

- The licensee shall provide a report of the Subcommittee's determination of the release schedule for the upcoming whitewater season to the RRAC by March 1st of each year. This report shall contain: (1) the release schedule for the upcoming season, (2) a summary of energy losses associated with the release schedule, (3) a summary of the previous years use records, and (4) rationale for the release schedule and any changes in ramping rates.

- The licensee shall be responsible for the calculation of energy losses associated with the release schedules proposed by the Subcommittee, and determining the ultimate feasibility of the release schedule.

- The licensee shall be responsible for posting the release schedule for the upcoming season, provisional or otherwise, on the flow notification system by March 1st of each year (see Section 8.3.5). Subsequent date/time changes of a given release must be agreed upon in advance by the Subcommittee, and posted on the flow notification system at least two weeks

prior to the original date of the release. In circumstances forcing emergency cancellation of a release, or cancellation as a result of insufficient number of reservations, these requirements may be waived (see Sections 8.3.6.1 and 8.4.1).

8.3.1.2 Other Activities

Every five years, beginning in 2005, the Subcommittee shall review whitewater use records to determine if variations in the magnitude of the whitewater budget are warranted. The Subcommittee may select an annual whitewater budget between 400 MWh and 1,080 MWh (see Section 8.3.7). The rationale for any changes in magnitude of the whitewater budget must be included in the Subcommittee's annual report submitted to the RRAC for that year.

8.3.2 WHITEWATER RELEASE SCHEDULE

8.3.2.1 Constraints of Scheduled Whitewater Releases

- The licensee shall allow for scheduled whitewater releases at only the Colton, Hannawa, and Sugar Island Developments of the Middle Raquette River Hydroelectric Project. The scheduled whitewater season is designated as July through September. The licensee shall provide scheduled whitewater releases during this period at one, some, or all of these developments according to the whitewater budget determined by the Subcommittee.

- The whitewater budget for years 2000 to 2004 shall not exceed 800 MWh per year. Variations to the initial 800 MWh whitewater budget may be made on a five year basis starting in 2005. The Subcommittee may select a whitewater budget between 400 MWh to 1,080 MWh (see Section 8.3.7).

- Energy losses associated with ramping (see Section 8.3.2.2) shall be included as part of the whitewater budget. Energy losses associated with instream flows shall not be included as part of the whitewater budget.

- To reduce adverse impacts of the flushing effects of the scheduled release on fish and benthic life enhanced as a result of required instream flows (Section 3.3.3), the number of scheduled releases provided in a given bypass reach shall not exceed six releases per whitewater season. This includes all types of releases (full day, half day, evening).

- Releases shall not be scheduled for consecutive days at any development.

- The approximate peak flow of any scheduled release shall be as follows:
  Colton ≈ 1250 cfs Hannawa ≈ 800 cfs Sugar Island ≈ 1500 cfs

- Unused portions of the whitewater budget may only be carried over to the following year provided the resulting budget for the following year does not violate any other constraints or ramping rates.

8.3.2.2 Ramping of Scheduled Whitewater Releases

The licensee shall be required to incorporate flow ramping when ascending to, or descending from, the desired peaks of any scheduled release. Energy losses associated with ramping flows shall be included as part of the whitewater budget. The licensee, at its own discretion, shall provide ramping utilizing turbine operations, gate releases, or a combination of both.

Within the Colton, Hannawa, and Sugar Island bypass reaches, instream flows are being provided (see Section 3.3.3). The instream flow required at the prevailing time of year at each development will serve as the starting point of ramping up to the whitewater peak flow. The basic ramping scheme adopts an hourly doubling of the flow when ascending to the peak flow and an hourly halving of the flow when descending from the peak flow. These ratios are approximate since they are subject to equipment limitations.

Recommendations for this basic ramping scheme may be revisited as soon as practical by the Subcommittee (see Section 8.3.1.1), including the NYSDEC and the USFWS, to determine if the ramping times or volumes should be altered. Revised ramping scheme recommendations may be implemented. While the total time duration and flow volume for ramping may be reduced through this process; it may not be increased. This revisitation may result in individual ramping steps being increased or decreased, provided that the total duration and volume do not exceed that which would be required using the standard ramping formula. However, the Subcommittee may choose to recommend maintaining a flow less than the peak flow for longer than required by the ramping scheme if it also corresponds to a desirable whitewater boating flow. (For example, a flow of 800 cfs at Colton has been identified as a desirable whitewater boating flow level in addition to the higher peak flow of approximately 1250 cfs. The Subcommittee may choose to recommend maintaining 800 cfs for an extended period of time while moving towards the peak flow in order to benefit certain boaters. This would not be interpreted as increasing the ramping flow requirements).

It is not anticipated that any revised ramping scheme recommendations will be altered in the future. However, should the Subcommittee desire to alter any revised ramping scheme recommendations, it may do so, provided that the changes are reviewed by, and acceptable to, the NYSDEC and USFWS.

8.3.3 WHITEWATER ACCESS

The following whitewater access points have been identified at the three developments for which scheduled whitewater releases are provided. A detailed description of these access points will be included in the recreation plan developed for the Middle Raquette River Hydroelectric Project (see Section 7.2.2). In addition, the Subcommittee may review this plan and offer input regarding final siting of access points.

8.3.3.1 Colton Development

Primary access into, and out of, the bypass reach shall be along the existing Stone Valley Trail system. The licensee shall maintain one trail connecting Lenny Road to the main Stone Valley Trail along the right bank of the bypass reach (one which terminates close to the mid-point of the bypass reach) as a formal intermediate access point to the bypass reach. In addition, there are several other marked trails connecting Lenny Road to the main Stone Valley Trail. Appropriate safety and directional signage shall be provided on the maintained intermediate trail, as well as relevant locations on the Stone Valley Trail. General parking shall be coincident with that provided for other recreational facilities detailed in Section 7.3.3.2. Additional parking is available along Lenny Road near the intermediate trail.

8.3.3.2 Hannawa Development

The licensee shall develop one formal access point to the upper portion of the bypass reach. The location of this access point shall be determined at the time of implementation to ensure that safety concerns associated with the falls and gorge are adequately addressed. The licensee shall develop one formal take-out from the bypass reach along the left shore of the bypass reach in the riffle area upstream of the powerhouse coincident with the canoe portage put-in location. All formal access points shall include appropriate safety and directional signage. Parking shall be coincident with that provided for other recreational facilities detailed in Section 7.3.3.3.

8.3.3.3 Sugar Island Development

The licensee shall develop one formal access point at the upstream end of the bypass reach near the pipeline intake. A second access point will be coincident with the canoe access point developed as part of the day use area (see Section 7.3.3.4). All formal access points shall include appropriate safety and directional signage. Parking shall be coincident with that provided for other recreational facilities detailed in Section 7.3.3.4.

8.3.4 SAFETY

The licensee shall maintain permanent signage at key locations along the bypass reaches of the Colton, Hannawa, and Sugar Island Developments to notify the public of fast rising water conditions. Additionally, the licensee shall post temporary signage at the same locations indicating the date and time of a scheduled whitewater release. The temporary signage shall be posted no less than 7 days prior to the scheduled release. To the extent allowed by law, the licensee shall not be held liable for injuries or death incurred by any persons during a scheduled release or spill event. The licensee shall not be responsible for conducting rescue efforts. In the event of an emergency, the licensee may provide assistance within the limitations of on-site staff.

8.3.5 FLOW NOTIFICATION SYSTEM

The licensee shall maintain a flow notification system for the purpose of providing the public with information regarding scheduled releases and/or known spillage events on a daily basis. This system shall be required for the Colton, Hannawa, and Sugar Island Developments. Scheduled release information will be posted by March 1st of each year and will be maintained through September. Posting of known spillage events will also begin March 1st and will be maintained through Columbus Day.

To achieve this requirement, the licensee will develop an Internet web page as one medium to provide flow information. The licensee, at its own discretion, may expand the Internet web page to include other developments on the Raquette River or any other river, as well as provisional spillage expectations at the three developments on a day ahead basis. Additionally, the licensee shall maintain a dial-up phone system to provide verbal flow information. Over the course of the license term, the licensee may convert the medium used to provide the public with flow information according to appropriate technology of the time.

8.3.6 USE OF SCHEDULED WHITEWATER RELEASES

8.3.6.1 Confirmation System

The licensee shall develop a confirmation system for the purpose of determining anticipated usage of scheduled whitewater release. Confirmations may be made (or canceled) by mail, Internet, or phone. Instructions on "how to make a confirmation" will be provided on the flow notification system. In addition to determining anticipated usage, the confirmation system will be used to identify if the scheduled release, at the Colton Development, should proceed (see below). Scheduled whitewater releases will be provided at the Hannawa and Sugar Island Developments regardless of the number of confirmations made at any time.

At Colton, if confirmations for less than five boaters have been made two weeks prior to the scheduled release, the licensee will post a notice on the flow notification indicating the number of confirmations made to date. If the licensee has not received five confirmations one week prior to the

release, the licensee may exercise the option to cancel the release. If this option is exercised, the licensee shall post same on the flow notification system, and will contact those who have made confirmations. Under these circumstances, the licensee shall not be obligated to reschedule the release.

8.3.6.2 On-site Sign-in System

The licensee shall provide at least one sign-in register at each location of a scheduled release. Whitewater users are encouraged to sign-in at these locations provided by the licensee. The licensee will describe the location of the sign-in registers on the flow notification system and will be responsible for collecting the contents of each register.

8.3.7 MODIFICATIONS TO WHITEWATER BUDGET

An initial whitewater budget of 800 MWh is established for years 2000 through 2004 as detailed in Section 8.3.2.1. Beginning in year 2005 (and every five years thereafter), the Subcommittee may make recommendations to vary the whitewater budget from 400 MWh to 1,080 MWh. At a minimum, the Subcommittee will review the anticipated use and actual use records of the previous five years. The anticipated use records shall consist of documentation of confirmations made (Section 8.3.6.1). The actual use records shall consist of the completed sign-in sheets collected by the licensee at each location (Section 8.3.6.2). Although users are not required to sign-in, they are encouraged to do so, as the sign-in sheets shall serve as the only documented record of actual use of each release.

The Subcommittee shall be allowed to vary the whitewater budget from 400 to 1,080 MWh based upon its review of the use records and other available pertinent data. Upon mutual agreement among members of the Subcommittee, the initial 800 MWh whitewater budget may be increased up to a maximum of 1,080 MWh (six full days each, at Colton, Hannawa, and Sugar Island). Conversely, the whitewater budget may also be decreased to a minimum of 400 MWh (three full days at Colton). All other constraints and ramping requirements specified in Sections 8.3.2.1 and 8.3.2.2 shall apply. Changes made to the whitewater budget shall remain in effect until the next five year review is reached.

8.4 EXCEPTIONS AND MONITORING

8.4.1 EXCEPTIONS

Allowances have been made to accommodate circumstances which necessitate the reduction and/or cancellation of scheduled whitewater releases at the Colton, Hannawa, and Sugar Island Developments. Additionally, circumstances may arise which preclude the licensee from scheduling whitewater releases in a given year. Reasons for same may include, but are not necessarily limited to, the following:

- Maintenance, repair, or reconstruction of project facilities at any hydroelectric project and/or water retaining structure on the Raquette River.
- Maintenance, repair, or reconstruction of nonproject facilities such as roads, bridges, or other structures in, or adjacent to, the river.
- Lack of sufficient confirmations (Colton only - see Section 8.3.6.1).
- "Dry" or "Drought" conditions experienced within the watershed (see Section 5.3.3).
- Any emergency situation related to dam safety, human life and property, or rescue.

If the licensee cancels a scheduled release for these reasons (with the exception of lack of sufficient confirmations), the licensee shall work with the Subcommittee to make all attempts to reschedule the release during the current calendar year.

8.4.2 MONITORING

8.4.2.1 Monitoring of Flows

The licensee shall not be required to perform instream gaging of scheduled whitewater releases. Relationships associated with unit flow, gate opening, and spillage shall be used to determine ramping and peak flow levels and shared with the Subcommittee.

8.4.2.2 Monitoring of Use

The licensee shall maintain anticipated use records (confirmations) and actual use records (sign-in sheets) (see Section 8.3.6).

8.5 IMPLEMENTATION SCHEDULE

The licensee shall begin implementation of scheduled whitewater releases and the flow notification system no later than year 2000 assuming license issuance in 1999 (see Table 2-1). The licensee, in conjunction with the AWA, may elect to coordinate releases prior to this date for the purpose of testing release mechanisms, ramping techniques, etc. If this option is exercised, the 800 MWh budget of year 2000 will be reduced by the amount used prior to year 2000.

9.0 LANDS

9.1 INTRODUCTION

To lower its operating costs and return value to its electric customers and shareholders, Niagara Mohawk Power Corporation (Niagara Mohawk) has divested itself of excess lands throughout its service territory. To achieve this, Niagara Mohawk formed and charged its subsidiary, NM Holdings, Inc. (NM Holdings), to develop and execute highest and best use plans to determine the most appropriate divestiture of these lands and then to proceed to convey same, at fair market value, to interested purchasers.

In 1996, NM Holdings developed such a plan for over 12,000 acres of land within the Raquette River watershed. None of these lands are within the FERC project boundaries associated with the Carry Falls, Upper Raquette River, Middle Raquette River, or Lower Raquette River Hydroelectric Projects. The highest and best use plan indicated the most appropriate means of divestiture of much of these lands was likely via fee conveyance, or conservation and development rights easements to the People of the State of New York (State). NM Holdings presented maps of this plan to the State and to the Signators. In response, the State prepared maps indicating which parcels were of interest to the State. The signators reviewed and commented on the maps prepared by the State. For the most part, the two sets of maps identified the same parcels. NM Holdings held the conveyance of only those lands identified by the State, until October 1, 1997 - the scheduled close of the Raquette River Settlement negotiations.

The land conveyance process between NM Holdings and the State pertains to lands outside of the FERC boundaries associated with the projects of this Settlement, and therefore is outside the jurisdiction of the FERC relicensing process. However, the land conveyance process has been included as part of this Settlement as a result of the cooperation between NM Holdings and the licensee to modify certain aspects of the land transfer (a process outside of FERC jurisdiction) to affect the outcome of certain aspects of the Settlement (a process under FERC jurisdiction).

Highlights of the land transfer to the State are presented in Section 9.3. Modifications to NM Holdings original disposition of lands not identified as of interest to the State are presented in Section 9.4. Lands the licensee has committed to including within the FERC boundary are presented in Section 9.5.

9.2 GENERAL AGREEMENTS

- NM Holdings is not the licensee of any hydroelectric project on the Raquette River (or any other river). As such, NM Holdings is not bound to the terms of this Settlement pertaining to issues associated with hydroelectric generation specified in Sections 1.0 through 8.0, and Section 10.0. NM Holdings is involved in this Settlement to the extent specified in Section 9.3 describing, but not governing, the transfer of land between NM Holdings and the State. NM Holdings is also involved in this Settlement to the extent specified in Section 9.4.

- If the funding scheme for parcels on the east shore of Carry Falls Reservoir identified in Section 9.3.2 does not proceed as planned, the funding of these lands will be reopened for further discussion.

- NM Holdings is willing to work with any party as a surrogate should the State withdraw from acquiring any lands identified in Section 9.3. NM Holdings will only work with another party if that party is willing and able to enter into a purchase contract, has financial commitments, and is able to meet the closing deadline of December 31, 1998 (see Section 9.3).

- Should a project or development thereof permanently cease hydroelectric operations and have its FERC license terminated, the licensee will grant the State, at fair market value, right of first refusal to the combined assets of the project or development. This is an inclusive offer of all lands and facilities included within the project or development and is not intended to cover parts thereof.

- NM Holdings and the licensee are committed to providing access to Carry Falls Reservoir by members of the Jordan Club. This access will remain at its current location (on project lands of the licensee) provided the Jordan Club can continue utilizing rights to access this area via lands of a third party. In the event the Jordan Club cannot maintain access rights across lands of the third party, NM Holdings and the licensee will work with the Jordan Club to assure access to the reservoir at an alternate location owned by the licensee and/or NM Holdings.

- NM Holdings and the licensee recognize the existing Jordan Club deed provision allowing use of lands between elevation 1385 feet and 1400 feet in Section 32, on the east side of Carry Falls Reservoir in the Town of Colton.

- NM Holdings will be pursuing its highest and best use land sales plan according to modifications identified in this Settlement.

9.3 NON-PROJECT LANDS SUBJECT TO STATE ACQUISITION FROM NM HOLDINGS

The following tracts of land represent the properties intended for conveyance to the State of New York. NM Holdings and the State of New York have identified a closing deadline of December 31, 1998. None of these parcels are within the FERC boundary of any project included as part of this Settlement. All acreages are subject to an actual field survey. These lands are indicated in maps included at the end of this section. These maps are intended to provide a general representation of the text descriptions provided below.

9.3.1 TRACT 1 - PIERCEFIELD

- A conservation and development rights easement to 2,400 ± acres surrounding the Dead Creek Flow parcel.

- A fee conveyance of the 1,000 ± acre Dead Creek Flow parcel.

9.3.2 TRACT 2 - CARRY FALLS RESERVOIR

- A fee conveyance of the 760 ± acres of land on the east side of the reservoir with the exception of several small gores of land in Section 32, Town of Colton, between Niagara Mohawk's FERC boundary and the Jordan Club lands south of the Jordan River, which are intended for conveyance to the Jordan Club. Additionally, there exists another small parcel of land in Section 32, Town of Colton, located north of the Jordan River between lands owned by the Jordan Club and lands intended for conveyance to the State. This parcel will be conveyed to the Jordan Club upon the agreement of the State. This represents all lands outside of the licensee's FERC boundary on the east shore of Carry Falls Reservoir.

- A conservation and development rights easement to a 1,000 ± acre tract on the west side of the reservoir.

- A fee conveyance of a 200 ± acre tract of land on the west side of the reservoir, starting in Section 40, Town of Colton and extending south of the Parmenter campsite and public access area.

9.3.3 TRACT 3 - STARK

- A fee conveyance of a 33 ± acre tract of land on the east side of the impoundment.

- A fee conveyance of a 415 ± acre parcel of land on the west side of the impoundment.

9.3.4 TRACT 4 - BLAKE

- A fee conveyance of a 400 ± acre tract of land on the east side of the impoundment.
- A conservation and development rights easement to a 1,672 ± acre tract of land on the west side of the impoundment.

9.3.5 TRACT 5 - RAINBOW

- A conservation and development rights easement to a 2,095 ± acre tract of land north of the Rainbow impoundment.
- Fee purchase of a 33 ± acre parcel north of the dam.

9.3.6 TRACT 6 - FIVE FALLS AND SOUTH COLTON

- A conservation and development rights easement to a 1,812 ± acre tract of land surrounding these impoundments.
- Fee purchase of 131 ± acres inside the Adirondack Park.

9.3.7 TRACT 7 - MISCELLANEOUS PARCELS

- A fee conveyance of ten miscellaneous parcels composing 449 ± acres.

9.3.8 ADDITIONAL MISCELLANEOUS PARCELS

- Additionally, NM Holdings will convey conservation and development rights easements to three additional parcels to the State of New York at no cost. These parcels include lands associated with the following recreational facilities provided as part of Settlement: (1) the Jordan River canoe portage route specified in Section 7.3.1, (2) the Blake bypass reach Dead Creek Access specified in Section 7.3.2.2, and (3) the Clear Pond Wild Forest trail specified in Section 7.3.2.3.

9.4 LANDS SUBJECT TO ADDITIONAL HOLD BY NM HOLDINGS

The four parcels referenced herein were identified as not of interest to the State. NM Holdings will hold any sale of these parcels until June 30, 1998 to facilitate exploring use and acquisition by other interested parties. The portions of these parcels intended for additional hold are not within the FERC boundary of any project included as part of this Settlement. The parcel numbering system indicated below corresponds to conventions developed by ADK during the Settlement negotiations.

If it is determined that the intended use by any interested party is consistent with NM Holdings highest and best use plan, NM Holdings will grant first refusal to the interested party, and offer for sale to the interested party, these parcels at fair market value. This is contingent on the interested party's ability to enter into a purchase agreement by June 30, 1998, and to close by December 31, 1998.

If the intended use by the interested party is not consistent with the highest and best use plan, NM Holdings will only grant first refusal to the interested party if the interested party commits to working with local interests in a good faith effort to develop local acceptance of the interested party's opinion of highest and best use. This is contingent on the interested party's ability to enter into a purchase agreement by June 30, 1998, and to close by December 31, 1998.

If it is determined after June 30, 1998 that development is critical to the highest and best use plan, then NM Holdings may implement that plan.

- **Parcel 4** Lands near the east shore of the Sugar Island impoundment near Old State Road.
- **Parcel 7** Lands along the east shore of the Raquette River near the Colton dam and Lenny Road.
- **Parcel 17a** Lands inland of the west shore of the Five Falls impoundment and dam.
- **Parcel 19** Lands adjacent to the west bank of the Rainbow impoundment.

9.5 LANDS SUBJECT TO FERC BOUNDARY REVISIONS

With the exception of parcels identified in Section 9.3.8 (which are intended for conveyance to the State), the licensee shall include all lands associated with recreation facilities within applicable FERC boundaries if they are located on, or will be located on, lands currently owned by the licensee, but not currently within the FERC boundary. The licensee will modify the appropriate FERC boundaries to include the following facilities:

- Portions of the canoe portage routes at Stark, South Colton, Hannawa, Norwood, and Norfolk (see Section 7.3).
- The intermediate access point to the east bank of the Colton bypass reach off Lenny Road (see Section 7.3.3.2).
- Any portions of the Stone Valley Trail system at Colton not currently within the FERC boundary (see Section 7.3.3.2).
- All lands associated with the development of the Red Sandstone Trail system (see Sections 7.3.3.3 and 7.3.3.4).

If it is determined that some, or all, of the lands associated with any other recreational facilities are not on lands owned by the licensee, the licensee may elect not to include those lands within the FERC boundary, or modify the location of the facility to ensure that it is sited on lands of the licensee. However, the licensee will first pursue working with the owner of such lands to ensure completion of, and access to, the facility prior to considering changing the location of the facility. The licensee shall complete all necessary FERC project boundary revisions by the end of 2004 (see Table 2-1).

9.6 IMPLEMENTATION SCHEDULE

General Agreements identified in Section 9.2, are effective at the time of filing of the Settlement.

NM Holdings and the State of New York have identified a closing date of December 31, 1998 pertaining to parcels identified in Section 9.3.

NM Holdings will hold the sale of lands identified in Section 9.4 until June 30, 1998 (latest purchase contract date, assuming closing occurs thereafter by December 31, 1998).

The licensee shall complete all necessary FERC project boundary revisions by the end of 2004 (see Table 2-1).

10.0 MISCELLANEOUS

10.1 RAQUETTE RIVER ADVISORY COUNCIL

In order to keep abreast of changing conditions that may affect river flows and management objectives, a Raquette River Advisory Council (RRAC), to be representative of various interests in the Raquette River corridor, will be formed as more specifically detailed in Appendix 2. Additionally, a whitewater subcommittee will be formed of members of the RRAC to determine the annual whitewater release schedule. The RRAC shall meet within one year of settlement filing.

10.2 RAQUETTE RIVER FUND

A fund will be established as described in Appendix 2.

10.3 ENFORCEABILITY

This Settlement Offer shall be enforceable by any signator and, to the extent that this Settlement Offer is accepted and approved by the NYSDEC and/or FERC and incorporated into the terms and conditions of any §401 WQC issued by the NYSDEC or any new license issued by FERC for any of the Raquette River Projects, the parties to those proceedings.

10.4 COOPERATION

Each and all signators will abide by and support the agreements and understandings commemorated herein in the context of their participation in the Raquette River Projects licensing proceeding(s) before the FERC, the §401 WQC proceedings before NYSDEC for same, and any other forum, as appropriate.

10.5 STREAMFLOW MONITORING

The licensee shall develop a flow monitoring plan in consultation with all signators within six (6) months of FERC license issuance. The flow monitoring plan shall include all gages and/or equipment for the purposes of:

a. determining the stage and/or flow of the Raquette River;

b. determining all other project flows including flows through the turbines and any other bypass/diversion flows; and

c. determining project headpond and tailwater elevation.

The licensee shall keep accurate and sufficient records of the impoundment elevations and all project flows to the satisfaction of the NYSDEC and shall provide such data in a format and interval as the NYSDEC may prescribe. All records will be made available for inspection at offices of the licensee within 5 business days, or in writing within 30 business days, of licensee's receipt of a written request for such records by any of the signators to this Settlement. Furthermore, licensee will provide a 7-day per week contact person to provide immediate responses to questions about abnormal conditions.

All gaging and ancillary equipment associated with the project, including the headpond and tailwater gages, shall be made operational and fully calibrated within 12 months of new FERC license issuance for the respective Raquette River Project.

The flow monitoring plan, including the gage calibration plan, shall be submitted to the NYSDEC for review and concurrence.

Permanent staff gages shall be installed to allow independent verification of headpond and tailwater elevations to the nearest 0.1 foot. Stage versus flow ratings shall be calibrated when rating changes occur, and maintained for these sites. Access to staff gages shall be provided to the NYSDEC, USFWS and/or their authorized representatives.

10.6 COMPLIANCE WITH THE LAW

Nothing in this Settlement shall preclude FERC, any resource agency or the licensee from complying with their obligations or exercising their rights and responsibilities under the National Environmental Policy Act, the Clean Water Act, the Endangered Species Act, the Federal Power Act as amended by the Electric Consumers Protection Act, the Fish and Wildlife Coordination Act or any other applicable state or federal laws. However, by entering into this Settlement, each signator represents that it believes, presuming compliance in accordance with the intent of the Settlement by all parties, its statutory obligations or responsibilities are, or can be, met consistent with this Settlement.

10.7 BINDING EFFECT

Nothing in this Settlement shall be construed as binding the DOI, USFWS, or the NPS to expend in any one fiscal year any sum in excess of appropriations made by Congress or administratively allocated for the purpose of this Settlement for the fiscal year, or to involve the DOI, USFWS, or the NPS in any contract or other obligation for the future expenditure of money in excess of such appropriations or allocations.

10.8 GENERAL PROVISIONS

10.8.1 PROVISION 1

Licensee agrees to implement the various obligations and requirements set forth herein. Resource agencies and other signators agree to support new licenses being issued by FERC for the Raquette River Projects with a December 31, 2033 new license term expiration, incorporating and implementing the provisions contained herein. This support shall include reasonable efforts to expedite the National Environmental Policy Act (NEPA) process. For those issues addressed herein, the signators agree not to propose, support or otherwise communicate to FERC or any other federal or state resource agency with jurisdiction directly related to the relicensing process any comments, certificate or license conditions other than ones consistent with the terms of this Settlement. However, this Settlement shall not be interpreted to restrict any signator's participation or comments in future relicensing of any of the Raquette River Projects. Further, this section shall not be read to predetermine the outcome of the NEPA process.

If such NEPA process leads to addition of any license conditions inconsistent with those contained herein, the signators recognize that such addition would trigger the rights of the signators to modify or withdraw from the Settlement pursuant to Section 10.9.

10.8.2 PROVISION 2

The signators agree that this Settlement fairly and appropriately considers the power and non-power uses and interests on the Raquette River. The signators further agree that this Settlement is specific to the Raquette River Projects. No signator shall be deemed, by virtue of execution of this Settlement, to have established precedent, or admitted or consented to any approach, methodology, or principle except as expressly provided for herein. In the event that this Settlement is approved by the NYSDEC and/or FERC, such approval shall not be deemed precedential or controlling regarding any particular issue or contention in any other proceeding.

10.8.3 PROVISION 3

If any §401 WQC and/or FERC License is issued that results in certificate or FERC license terms inconsistent with the terms of the Settlement for any of the Raquette River Projects, as to that project, any signator may withdraw pursuant to Section 10.9 of this Settlement. The Settlement, including all mitigative measures and annual contributions to the Raquette River Fund as specified in Appendix 2, shall remain in effect for the term of the new license and for any annual license issued subsequent thereto, subject to any authority to require modifications reserved by FERC in the new license.

10.8.4 PROVISION 4

The signators have entered into the negotiations and discussions leading to this Settlement with the explicit understanding that all offers of settlement and the discussions relating thereto are privileged, shall not prejudice the position of any signator participant taking part in such discussions and negotiations, and are not to be otherwise used in any manner in connection with these or any other proceedings.

10.8.5 PROVISION 5

This Settlement shall apply to, and be binding on, the signators and their successors and assigns, but only with regard to the above-captioned proceeding and then only if the Settlement is made effective as provided herein. No change in corporate status of the licensee shall in any way alter licensee's responsibilities under the Settlement. Each signator to the Settlement certifies that he or she is authorized to execute the Settlement and legally bind the party he or she represents.

10.9 APPROVAL OF SETTLEMENT

10.9.1 ITEM 1

The signators have entered into and jointly submit this Settlement with the following express conditions:

- NYSDEC approves and accepts all provisions herein and either issues or waives §401 WQC's;

- and that FERC approves and accepts all provisions herein and issues new licenses for each of the Raquette River Projects consistent with the terms of the Settlement.

In the event that either NYSDEC or FERC changes, conditions, or modifies any provision contained herein in any NYSDEC-issued §401 WQC or FERC Order(s) Issuing New License(s), whether through its own action or through incorporation of conditions of §401 WQC's, the Settlement shall be considered modified to conform to same unless any signator to the Settlement within 30 days of NYSDEC's or FERC's action provides written notice by certified mail to the other signators that it objects to the modification, change or condition. The signators shall then commence negotiations for a period of up to 90 days to resolve the issue and modify the Settlement, as needed. If agreement cannot be reached, then the objecting party may withdraw from the Settlement, without incurring any obligations or benefitting from rights associated with the Settlement. In the event that the Settlement is withdrawn, it shall not constitute a part of the record of ongoing proceedings.

10.9.2 ITEM 2

In the event that FERC issues final orders that do not include conditions consistent with Sections 10.1 and 10.2 and Appendix 2 of this Settlement Offer and regardless of whether this Settlement is withdrawn from by a party other than licensee, NYSDEC, USFWS or NPS, the licensee agrees that it will comply with and implement the terms of Paragraphs 10.1 and 10.2 and Appendix 2 as long as the Raquette River Projects receive new FERC licenses with operational terms and conditions and financial impacts consistent with the Settlement as filed.

10.10 DISPUTE RESOLUTION

In the event that any dispute arises with the terms and conditions of this Settlement, the signators agree to engage in good faith negotiations for a period of at least 90 days, if necessary, in an effort to resolve the dispute, said negotiations to be initiated by the aggrieved party. A minimum of two meetings, if necessary, scheduled and organized by the objecting party, shall be held to attempt to resolve the dispute during the 90-day period. In the event that resolution cannot be reached within the 90-day negotiating period, the dispute may be referred to FERC pursuant to FERC's Rules of Practice and Procedure (18 CFR Part 385).

Notwithstanding any other provision of this Settlement, any signator may seek relief in any appropriate forum for non-compliance with this Settlement by any signator hereto.

10.11 PROJECT DECOMMISSIONING

This Settlement does not include any condition (subject to the exception in Section 9.2, 4th bullet) relating to decommissioning or dam removal of the Raquette River Projects in whole or part. With or without amendment of this Settlement by mutual consent, any signator may seek such further relief from FERC regarding such decommissioning as FERC may order, recognizing that no signator to this Settlement has, or is, advocating decommissioning of any development of the Raquette River Projects or any of the project facilities during the term of the new licenses for the Raquette River Projects.

10.12 USE OF REOPENER CLAUSES IN THE NEW LICENSES

This Settlement is not intended to limit or restrict any signator's authority, if any, to seek different or modified license conditions through a license reopener/amendment. Before any signator proceeds to seek a reopener, the signator shall request all signators to commence negotiations for a period of at least 90 days to resolve the issue, and to agree to modify this Settlement accordingly, if necessary.

10.13 SEVERABILITY

In the event that NYSDEC and/or FERC rejects or modifies any of the provisions of this Settlement, then the rest of the agreement shall remain in effect, subject to the provisions of Sections 10.1, 10.2 and 10.10, above.

10.14 REHEARING AND APPEALS

All signators affirm that they will not appeal a FERC license via a request for rehearing unless:
a) the license contains conditions which are inconsistent with the Settlement Offer, which have not been substantively or procedurally addressed by the Settlement Offer, or which include technical terms which require clarifications or corrections; and
b) for those other matters as to which no signator objects.

11.0 SIGNATORS

List of Signators:

Niagara Mohawk Power Corporation	by Thomas Baron, Vice President, Fossil and Hydro Generation March 25, 1998
New York State Department of Environmental Conservation	by Peter Duncan, Deputy Commissioner for Natural Resources March 31, 1998
United States Fish and Wildlife Service	by Ronald Lambertson, Regional Director April 1, 1998
United States National Park Service	by Terry Savage for Marie Rust, Field Director March 20, 1998
New York State Adirondack Park Agency	by Daniel T. Fitts, Executive Director April 1, 1998
Saint Lawrence County	by R.Shawn Gray, Chair, St. Lawrence County Board of Legislators March 26, 1998
New York State Conservation Council	by Howard Cushing, Jr., President March 30, 1998
Adirondack Mountain Club	by Betty Lou Bailey, Chair, Canoe Routes Subcommittee,ConservationCommittee March 31, 1998
New York Rivers United	by Bruce Carpenter, Executive Director March 15, 1998
The Adirondack Council	by Bernard Melewski, Counsel March 31, 1998
American Whitewater	by Peter Skinner, Member, AW Board of Directors April 2, 1998
The Association for the Protection of the Adirondacks	by David Gibson, Executive Director April 1, 1998
National Audubon Society	by David Miller, Executive Director (NYS) March 18, 1998
American Rivers	by Margaret Bowman, Director of Hydropower Programs April 3, 1998
American Canoe Association	by David Jenkins, Director of Conservation Programs April 1, 1998
The Jordan Club	by Anne Hazzard, President March 22, 1998
North Country Raquette River Advocates	by Steven Yurgartis and John Omohundro, Co-chairs March 27, 1998

Parties filing no objection but not signing:

New York Power Authority (by Beverly Ravitch, Principal Attorney)

Trout Unlimited, New York Council (by Thomas Matias, President)

SETTLEMENT OFFER - MARCH 13, 1998
RAQUETTE RIVER PROJECTS
FERC PROJECT NUMBERS 2060, 2084, 2320, and 2330

NIAGARA MOHAWK POWER CORPORATION

By: Thomas Baron
Thomas Baron

Title: Vice President, Fossil and Hydro Generation

Date: MARCH 25, 1998

SETTLEMENT OFFER - MARCH 13, 1998
RAQUETTE RIVER PROJECTS
FERC PROJECT NUMBERS 2060, 2084, 2320, and 2330

NEW YORK STATE DEPARTMENT OF ENVIRONMENTAL CONSERVATION

By: _____
Peter Duncan

Title: Deputy Commissioner for Natural Resources

Date: 3/31/98

With this signature, the Department also confirms its intent to include public access consistent with Section 2.13 of this settlement in any easements described in Section 9.3 acquired on behalf of the People of New York.

SETTLEMENT OFFER - MARCH 13, 1998
RAQUETTE RIVER PROJECTS
FERC PROJECT NUMBERS 2060, 2084, 2320, and 2330

UNITED STATES FISH AND WILDLIFE SERVICE

By: Ronald E. Lambertson
Ronald Lambertson

Title: Regional Director

Date: 4-1-98

SETTLEMENT OFFER - MARCH 13, 1998
RAQUETTE RIVER PROJECTS
FERC PROJECT NUMBERS 2060, 2084, 2320, and 2330

NATIONAL PARK SERVICE

By: _____
M. Marie Rust

Title: Field Director

Date: 3.20 98

SETTLEMENT OFFER - MARCH 13, 1998
RAQUETTE RIVER PROJECTS
FERC PROJECT NUMBERS 2060, 2084, 2320, and 2330

ADIRONDACK PARK AGENCY

By: _____
Daniel T. Fitts

Title: Executive Director

Date: 4/1/98

SETTLEMENT OFFER - MARCH 13, 1998
RAQUETTE RIVER PROJECTS
FERC PROJECT NUMBERS 2060, 2084, 2320, and 2330

SAINT LAWRENCE COUNTY

Signed with the caveats, agreement and disagreements as noted in Resolution Number 71-98 below:

By: _____
R. Shawn Gray

Title: Chair, St. Lawrence County Board of Legislators

Date: 3-26-98

RESOLUTION NO. 71-98, NIAGARA MOHAWK RAQUETTE RIVER SETTLEMENT AGREEMENT

By Mr. Greenwood, Chair, Finance Committee

WHEREAS, the Niagara Mohawk Power Corporation has applied to the Federal Energy Regulatory Commission to renew licenses for its Lower, Middle and Upper Raquette River and Carry Falls Projects, and to the New York State Department of Environmental Conservation for water quality certification for the same projects, and

WHEREAS, the Project settlement team has proposed a comprehensive agreement covering stream flows, impoundment regulation, fish passage and protection, recreation facilities, whitewater boating releases, land transfers, and miscellaneous issues, and

WHEREAS, the County has participated on the settlement team and has given due consideration to the proposed settlement agreement,

NOW, THEREFORE, BE IT RESOLVED that the St. Lawrence County Board of Legislators authorizes its Chair to register the following caveats and areas of agreement and disagreement:

Caveats: St. Lawrence County will monitor river corridor developments to ensure that Niagara Mohawk and any subsequent licensee will continue to work closely with local governments and voluntary associations in the Raquette River watershed to achieve water quality, public access and recreational goals;

St. Lawrence County will address the prospective state purchase of Niagara Mohawk lands in fee and in easement with the affected local governments and will encourage those local governments to weigh the loss of development potential that those purchases will represent against the public benefits of such purchases and to exercise their right to deny the state the ability to complete the process of purchase; and,

Agreement: St. Lawrence County approves provisions in the settlement agreement that apply to instream flows and base flow, impoundment fluctuation, fish passage and protection, recreation, whitewater, and miscellaneous issues; and

Disagreement: St. Lawrence County registers its strong disagreement that the settlement should include any provision for the New York State Department of Environmental Conservation to acquire land; and,

The County is particularly displeased that the Department of Environmental Conservation intends to purchase over 12,000 acres in fee and in easement when the same agency will decide whether to grant water quality certification to the applicant's Raquette River projects, without which the projects may not operate even if licensed by the Federal Energy Regulatory Commission; and

BE IT FURTHER RESOLVED that St. Lawrence County calls to the attention of its elected representatives and to the state leadership that the matter of state purchase of lands in fee and in easement, as included in the Niagara Mohawk Raquette River Project Settlement Agreement, raises yet again this long-standing issue: the Department of Environmental Conservation does not pay full taxes on lands owned in fee outside the Adirondack Park and does not pay any taxes on state-owned easements on land located outside the Adirondack Park, that share commonly being in excess of 70% of the taxable value; and

BE IT FURTHER RESOLVED that the St. Lawrence County Board of Legislators instructs the Chair to refrain from signing the Agreement until the Director of the New York State Department of Environmental Conservation, Division of Lands and Forests begins formal meetings with the St. Lawrence County Legislature on the issue of State land purchases within the County.

BE IT FURTHER RESOLVED that this resolution shall be transmitted to Governor George Pataki, Senators Wright and Meier, Member of the Assembly Chloe Ann O'Neil, the Supervisors of the Towns of Colton, Norfolk, Parishville, Piercefield, Pierrepont, and Potsdam, the Mayors of the Villages of Norwood and Potsdam, Niagara Mohawk Power Corporation, New York State Department of Environmental Conservation, New York State Public Service Commission, Federal Energy Regulatory Commission, and other parties to the Raquette River Projects Settlement.

STATE OF NEW YORK)
) ss:
COUNTY OF ST. LAWRENCE)

I, Tammy Girard, Deputy Clerk of the St. Lawrence County Legislature, **DO HEREBY CERTIFY,** that I have compared this copy of Resolution No. **71-98, NIAGARA MOHAWK RAQUETTE RIVER SETTLEMENT AGREEMENT,** adopted March 2, 1998, with the original record in this office and that the same is a correct transcript thereof and of the whole of said original record.

Tammy M. Girard
Tammy Girard, Deputy Clerk
St. Lawrence County Legislature
March 24, 1998

SETTLEMENT OFFER - MARCH 13, 1998
RAQUETTE RIVER PROJECTS
FERC PROJECT NUMBERS 2060, 2084, 2320, and 2330

NEW YORK CONSERVATION COUNCIL, INC.
Representing Federation of Sportsmen's (Fish & Game) Clubs from throughout New York State, and St. Lawrence County Federation of Sportsmen's Clubs

By: Howard Cushing Jr. Pres.
Howard Cushing

Title: President

Date: 3/30/98

SETTLEMENT OFFER - MARCH 13, 1998
RAQUETTE RIVER PROJECTS
FERC PROJECT NUMBERS 2060, 2084, 2320, and 2330

ADIRONDACK MOUNTAIN CLUB

By: Betty Lou Bailey
Betty Lou Bailey

Title: Chair, Canoe Routes Subcommittee, Conservation Committee

Date: March 31, 1998

Signed on the express condition that any and all easements per section 9.3 will include recreation rights.

SETTLEMENT OFFER - MARCH 13, 1998
RAQUETTE RIVER PROJECTS
FERC PROJECT NUMBERS 2060, 2084, 2320, and 2330

NEW YORK RIVERS UNITED

By: _____
Bruce Carpenter

Title: Executive Director

Date: 3/05/98

SETTLEMENT OFFER - MARCH 13, 1998
RAQUETTE RIVER PROJECTS
FERC PROJECT NUMBERS 2060, 2084, 2320, and 2330

ADIRONDACK COUNCIL

By: Bernard C Melewski
Bernard Melewski

Title: Counsel

Date: 3/31/98

SETTLEMENT OFFER - MARCH 13, 1998
RAQUETTE RIVER PROJECTS
FERC PROJECT NUMBERS 2060, 2084, 2320, AND 2330

AMERICAN WHITEWATER AFFILIATION

By: Peter N. Skinner
Peter N. Skinner

Title: Member AW Board of Directors

Date: April 2, 1998

Provisos: Prior to the date of this consent, the American Whitewater Board of Directors voted to shorten its name to "American Whitewater."

American Whitewater understands that (i) "known spillage events" (page 8-6, section 8.3.5) are spillage conditions believed by agents of the Licensee to be occurring at dams at the time information about them is posted on the flow notification system; (ii) "provisional spillage expectations" (page 8-6, section 8.3.5) refer to spillage conditions at the dams that represent conditional flow predictions based on the licensee's best information about current weather and river flow patterns; (iii) Licensee's discretion with respect to the expansion of the Internet web page to include provisional spillage expectations will be exercised in good faith after advising the Whitewater Subcommittee; and, (iv) pursuant to the first paragraph of Section 8.3.5, Licensee will post daily both scheduled release information and known spillage events. American Whitewater's consent to this Agreement is inoperative unless and until the Licensee indicates that its concurrence with American Whitewater's interpretation of the Licensee's commitment under Section 8.3.5.

SETTLEMENT OFFER - MARCH 12, 1998
RAQUETTE RIVER PROJECTS
FERC PROJECT NUMBERS 2060, 2084, 2320, and 2330

AMERICAN CANOE ASSOCIATION

By: _____
David Jenkins

Title: Director of Conservation Programs

Date: April 1, 1998

SETTLEMENT OFFER - MARCH 13, 1998
RAQUETTE RIVER PROJECTS
FERC PROJECT NUMBERS 2060, 2084, 2320, and 2330

ASSOCIATION FOR THE PROTECTION OF THE ADIRONDACKS

By: _____
David H. Gibson

Title: Executive Director

Date: 4/1/98

SETTLEMENT OFFER - MARCH 13, 1998
RAQUETTE RIVER PROJECTS
FERC PROJECT NUMBERS 2060, 2084, 2320, and 2330

NATIONAL AUDUBON SOCIETY

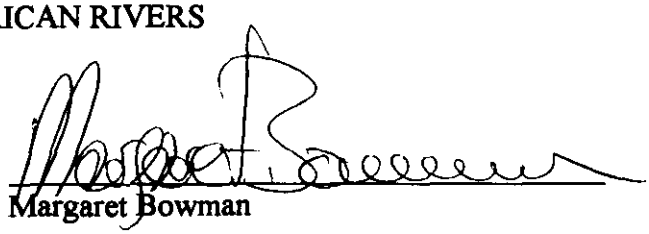
By: _____
David Miller

Title: Executive Director

Date: 3/18/98

SETTLEMENT OFFER - MARCH 13, 1998
RAQUETTE RIVER PROJECTS
FERC PROJECT NUMBERS 2060, 2084, 2320, and 2330

AMERICAN RIVERS

By: 
Margaret Bowman

Title: Director of Hydropower Programs

Date: 4/3/98

SETTLEMENT OFFER - MARCH 13, 1998
RAQUETTE RIVER PROJECTS
FERC PROJECT NUMBERS 2060, 2084, 2320, and 2330

THE JORDAN CLUB

By: Anne Hazzard
Anne Hazzard

Title: President

Date: March 22, 1998

SETTLEMENT OFFER - MARCH 13, 1998
RAQUETTE RIVER PROJECTS
FERC PROJECT NUMBERS 2060, 2084, 2320, and 2330

NORTH COUNTRY RAQUETTE RIVER ADVOCATES

By: Steven Yurgartis
Steven Yurgartis

Title: co-chair

Date: 3/27/98

By: John T. Omohundro
John Omohundro

Title: Co-chair

Date: 3-27-98

1633 Broadway
New York, New York 10019
212 468.6000

NewYorkPower Authority

98 FEB 19 AM 8:23

February 17, 1998

Ms. Betty Ann Hughes
Department of Environmental Conservation
50 Wolf Road
Albany, NY 12233-1550

Re: Niagara Mohawk Power Corporation
Raquette River Draft Settlement Agreement

The Power Authority has received the February 3, 1998 draft Settlement Offer for the Raquette River projects. As a party to these proceedings the Authority has no objection to the proposed settlement concerning the Raquette River projects.

The Authority's interest in these proceedings is focussed principally on the School Street Project, located on the Mohawk River downstream from two of the Authority's projects. The Authority retains an interest in negotiations and settlement regarding the School Street Project.

Thank you for your consideration.

Very truly yours,

Beverly Ravitch

Beverly Ravitch
Principal Attorney

cc: Distribution
Hon. Kevin J. Casutto, ALJ
John L. Osinski, NYPA

37 Douglas Road
Delmar New York 12054
March 3, 1998

Ms. Betty Ann Hughes
Department of Environmental Conservation
50 Wolf Road
Albany, New York 12233-1550

Re: Raquette River
FERC Project Nos. 2060, 2084, 2320 and 2330

As you are aware, circumstances prevented full participation by the New York Council of Trout Unlimited in settlement negotiations for the above-captioned projects. Therefore, we are not in a position to be a signatory to the final settlement. However, the undersigned has reviewed the draft settlement offer dated February 3, 1998. The New York Council of Trout Unlimited has no objection to the proposed settlement.

Sincerely yours,

Thomas R. Matias

Thomas R. Matias

APPENDIX 1

LIST OF STUDIES CONDUCTED

STUDIES CONDUCTED FOR THE CARRY FALLS AND UPPER RAQUETTE RIVER HYDROELECTRIC PROJECTS	
Study Title	**Dated**
Habitat Mapping and Fisheries Evaluation of the Bypassed Reaches of the Upper Raquette River Hydroelectric Project (FERC No. 2084) and Carry Falls Project (FERC No. 2060)	February 1, 1996
A Review of the Fisheries Resources of the Upper Raquette River Hydroelectric Project (FERC No. 2084) and Carry Falls Project (FERC No. 2060)	February 3, 1996
Upper Raquette (FERC No. 2084) and Carry Falls (FERC No. 2060) Projects Report on Land Use Management, Aesthetics, and Recreational Resources	February 1996
Impoundment Fluctuation Study for the Upper Raquette River (FERC No. 2084) and Carry Falls Projects (FERC No. 2060)	February 1996
Initial Consultation Document Upper Raquette River Hydroelectric Project (FERC No. 2084) and Carry Falls Project (FERC No. 2060)	April 1996
A Fisheries Investigation of the Raquette River in the Vicinity of the Upper Raquette River Hydroelectric Project FERC Project Number 2084 St. Lawrence County, New York June 24 Through 28, 1996	February 1997
Habitat Suitability Index Criteria for Walleye, *Stizostedion vitreum*, Egg Incubation	February 1997
An Investigation of Walleye Spawning in the Vicinity of the Upper Raquette River and Carry Falls Projects on the Raquette River St. Lawrence County, New York March Through June, 1996	February 1997
Upper Raquette River Hydroelectric Projects Delphi Instream Flow Study Final Report	March 1997
Upper Raquette River Hydroelectric Project (FERC No. 2084) and Carry Falls Project (FERC No. 2060) Recreation Resources Assessment	March 1997
Impoundment Fluctuation Study for the Upper Raquette River (FERC No. 2084) and Carry Falls Projects (FERC No. 2060) Final Report	April 1997
Raquette River Projects Water Quality Studies	April 1997
An Evaluation of Fish Entrainment and Mortality at the Carry Falls Project (FERC No. 2060) and Upper Raquette River Hydroelectric Project (FERC No. 2084) Raquette River, St. Lawrence County, New York	June 13, 1997
Raquette River Comprehensive Environmental Plan (NMPC and ED&R)	July 1992

STUDIES CONDUCTED FOR THE LOWER RAQUETTE RIVER HYDROELECTRIC PROJECT	
Study Title	**Dated**
Habitat Mapping of the Raquette River in the Vicinity of the Middle Raquette River Project (FERC No. 2320) and the Lower Raquette River Project (FERC No. 2330) St. Lawrence County, New York	July 11, 1988
Photo Documentation of Impoundment Water Level Fluctuation for the Lower Raquette River Project (FERC No. 2330)	January 1989
Field Investigations for the Lower Raquette River Project (FERC No. 2330)	June 1989
Phase III Conceptual Recreational Facilities Raquette River Corridor Study St. Lawrence County, New York	October 18, 1989
A Fisheries and Water Quality Investigation of the Norwood, East Norfolk, Norfolk, and Raymondville Bypassed Reaches in the Vicinity of the Lower Raquette River Project (FERC No. 2330) and the Yaleville Bypassed Reach in the Vicinity of the Yaleville Hydroelectric Project (FERC No. 9222) St. Lawrence County, New York July 5 and 6, 1989	December 7, 1989
A Walleye Spawning Survey of the Raquette River in the Vicinity of the Middle Raquette River, Lower Raquette River, and Yaleville Hydroelectric Projects St. Lawrence County, New York March 1 through June 30, 1989	December 11, 1989
Instream Flow Study of the Lower Raquette River in the Vicinity of the Lower Raquette River Project (FERC No. 2330) St. Lawrence County, New York	January 23, 1990
A Routing and Habitat Availability Study of the Raquette River Downstream of the Lower Raquette River Project (FERC No. 2330) St. Lawrence County, New York	April 4, 1990
Response to FERC Schedule B Additional Information Request for the Lower Raquette River Dated August 7, 1992	Submitted September 29, 1993
Response to FERC Additional Information Request for the Middle Raquette River Project No. 2320-005 and the Lower Raquette River Project No. 2330-007	Submitted December 15, 1995
Final Study Report on Fish Entrainment and Mortality for the Lower Raquette River	Submitted January 8, 1996
Raquette River Comprehensive Environmental Plan (NMPC and ED&R)	July 1992

APPENDIX 2

RAQUETTE RIVER ADVISORY COUNCIL AND FUND

THE RAQUETTE RIVER ADVISORY COUNCIL AND FUND

1. RAQUETTE RIVER ADVISORY COUNCIL

At a minimum, the following entities shall be initially invited to form, via designating a representative to serve on, the Raquette River Advisory Council (RRAC), with service being conditioned on those entities listed below being signators to the Settlement:

- New York State Department of Environmental Conservation ("NYSDEC")
- Niagara Mohawk Power Corporation, its successors and assigns ("NMPC")
- United States Fish & Wildlife Service ("USFWS")
- New York Rivers United ("NYRU")
- New York State Conservation Council ("NYSCC")
- Adirondack Mountain Club ("ADK")
- St. Lawrence County ("SLC")
- New York Council, Trout Unlimited ("NY/TU")
- American Whitewater Affiliation ("AWA")
- National Park Service ("NPS")
- Adirondack Park Agency ("APA")
- The Jordan Club
- North Country Raquette River Advocates ("NCCRA")

In addition, a representative of the local whitewater boating community and a local government representative will serve on the Whitewater Subcommittee and as members of the RRAC, as specified in Section 8.3.1.

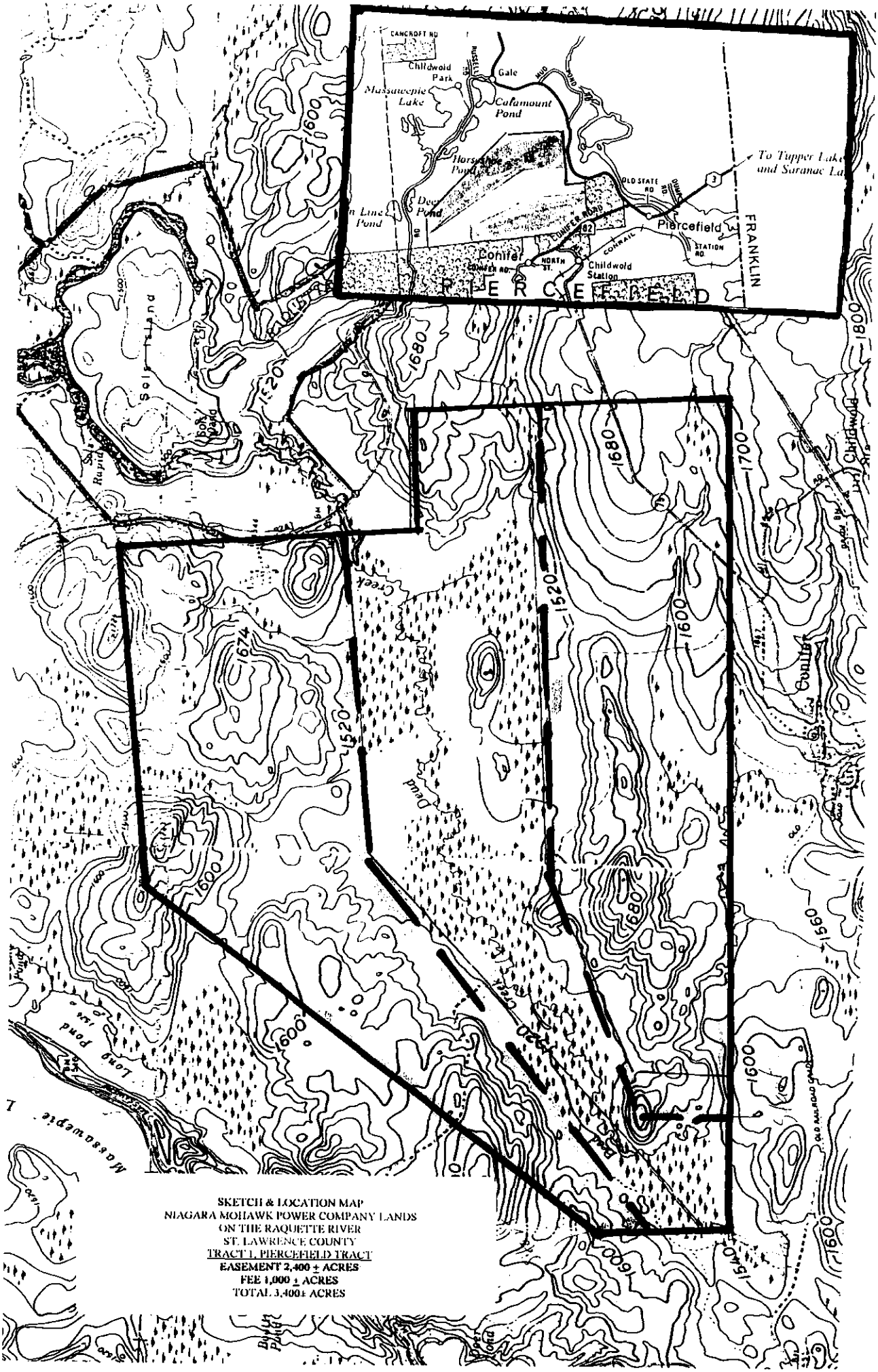
The NYSDEC will chair the RRAC.

The RRAC will exist and function in accordance with By-Laws and Rules of Procedure to be adopted by the RRAC, with same to be modeled on the By-Laws and Rules of Procedure being put into place by the Beaver River Advisory Committee and the Black River Advisory Committee following the settlements reached on various FERC terms and conditions for NMPC's Black River Hydroelectric Project No. 2569 and Beaver River Hydroelectric Project No. 2645.

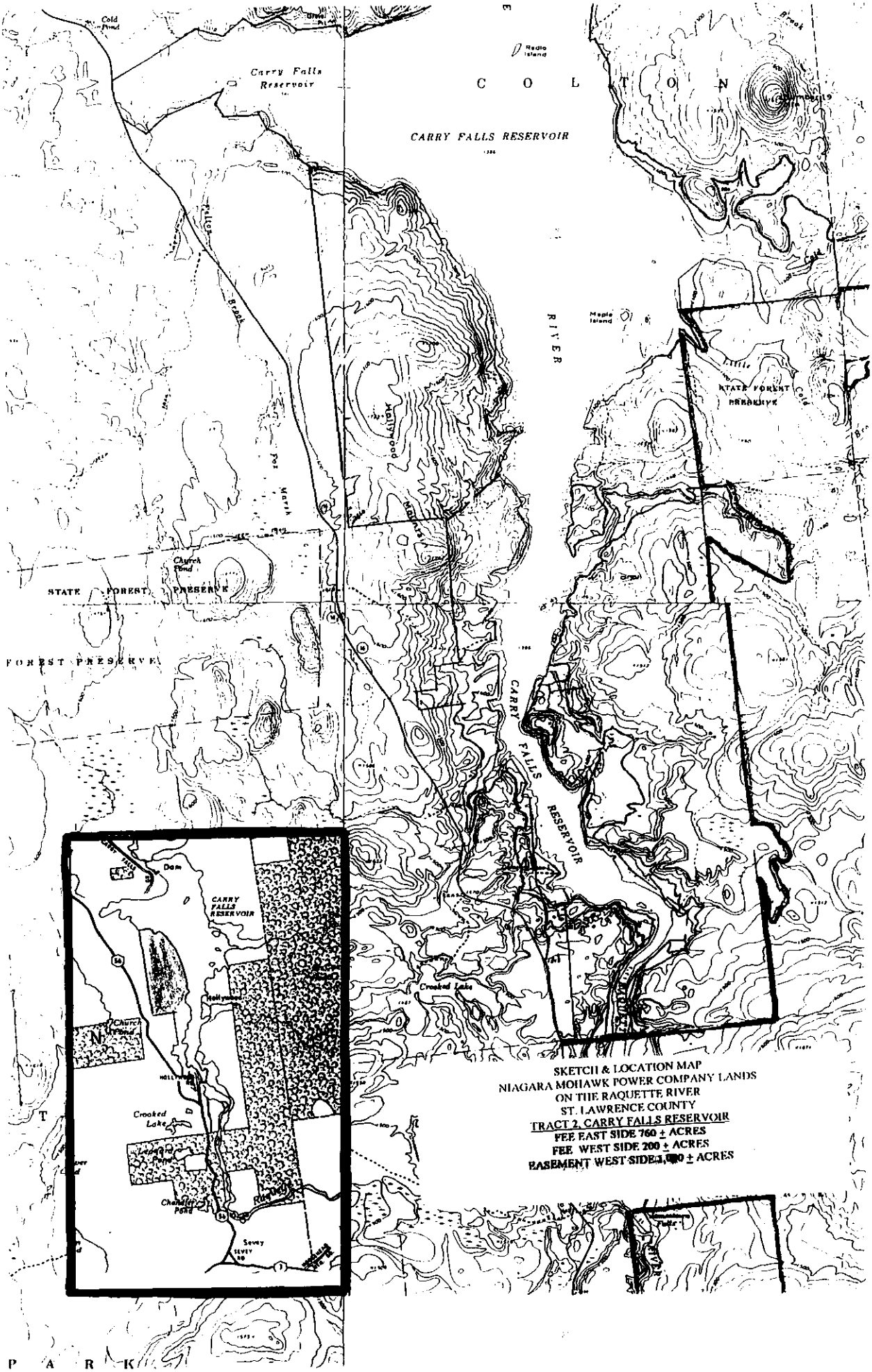
APPENDIX 3

NON-PROJECT LANDS SUBJECT TO STATE ACQUISITION FROM NM HOLDINGS

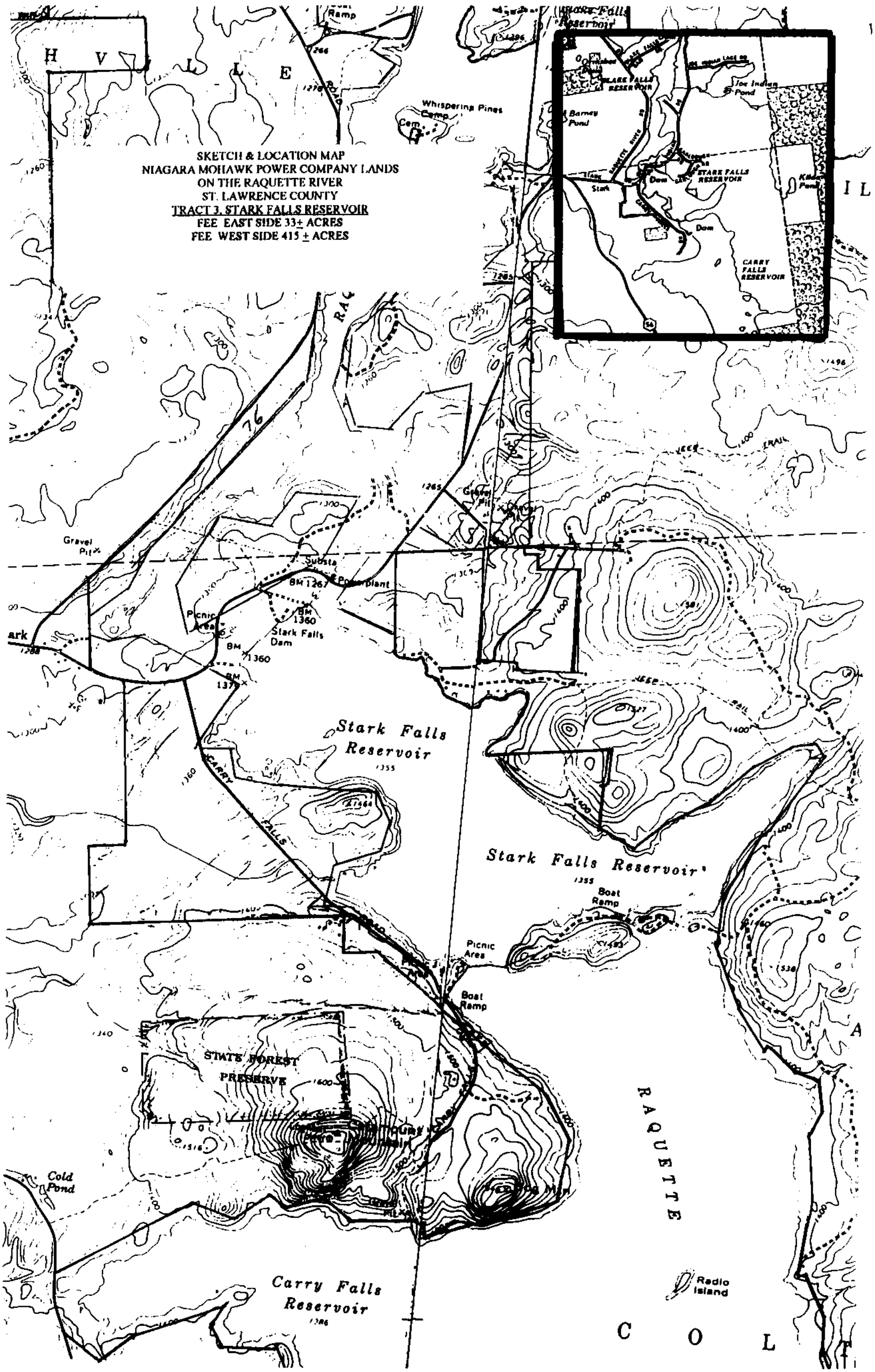
(Maps Prepared by the NYSDEC)

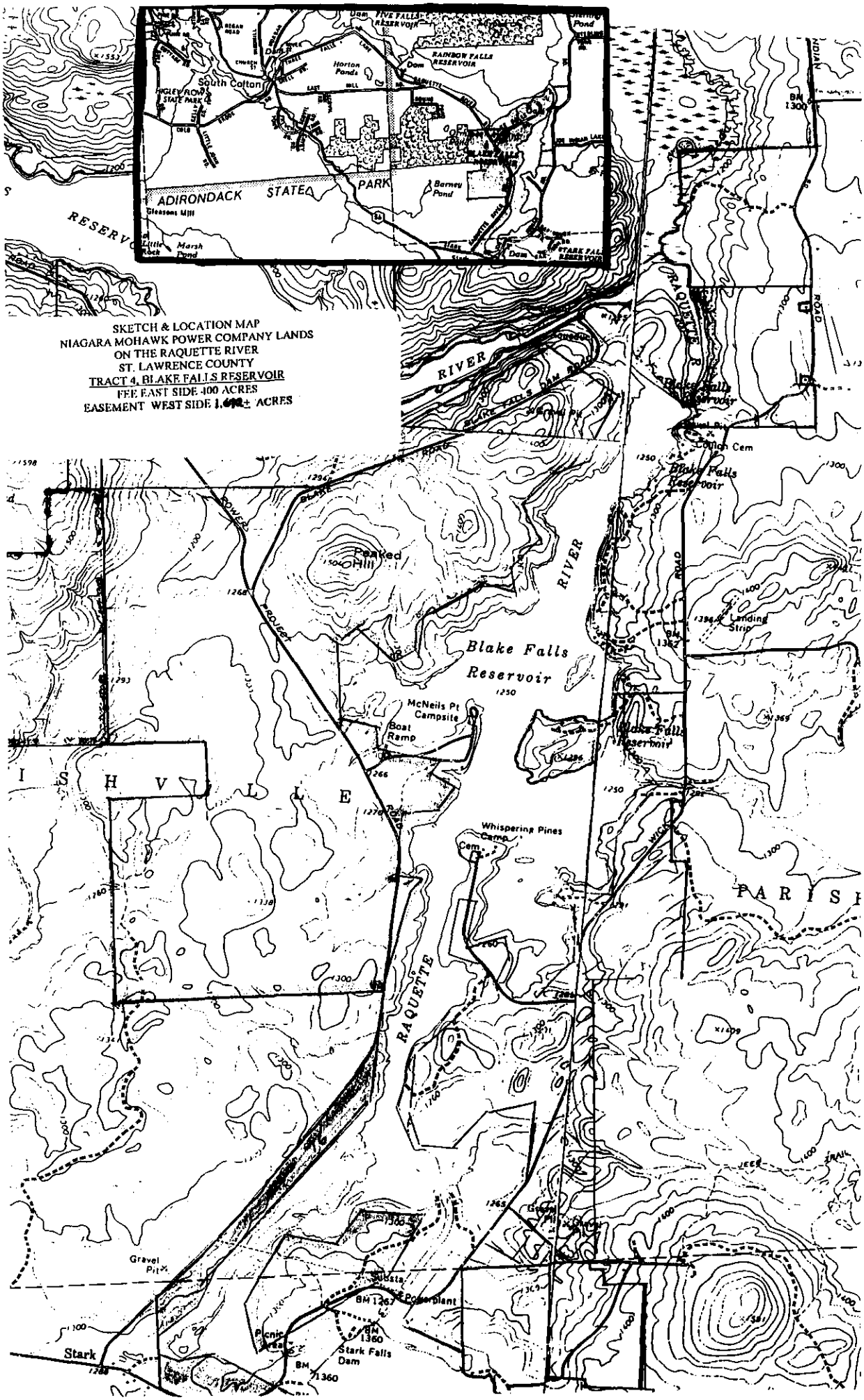


SKETCH & LOCATION MAP
NIAGARA MOHAWK POWER COMPANY LANDS
ON THE RAQUETTE RIVER
ST. LAWRENCE COUNTY
TRACT 1, PIERCEFIELD TRACT
EASEMENT 2,400 ± ACRES
FEE 1,000 ± ACRES
TOTAL 3,400± ACRES

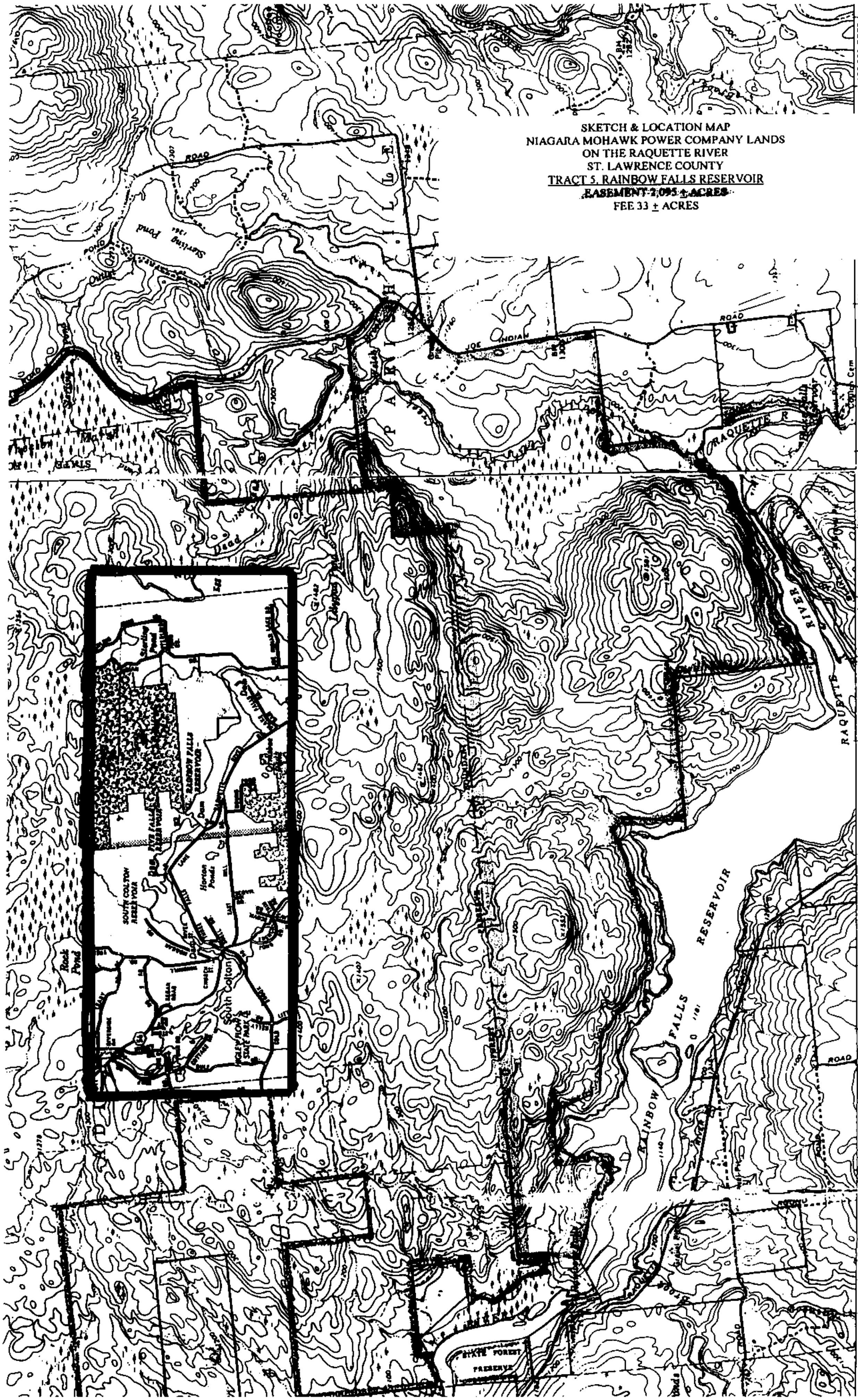


SKETCH & LOCATION MAP
NIAGARA MOHAWK POWER COMPANY LANDS
ON THE RAQUETTE RIVER
ST. LAWRENCE COUNTY
TRACT 2, CARRY FALLS RESERVOIR
FEE EAST SIDE 760 ± ACRES
FEE WEST SIDE 200 ± ACRES
EASEMENT WEST SIDE 3,000 ± ACRES

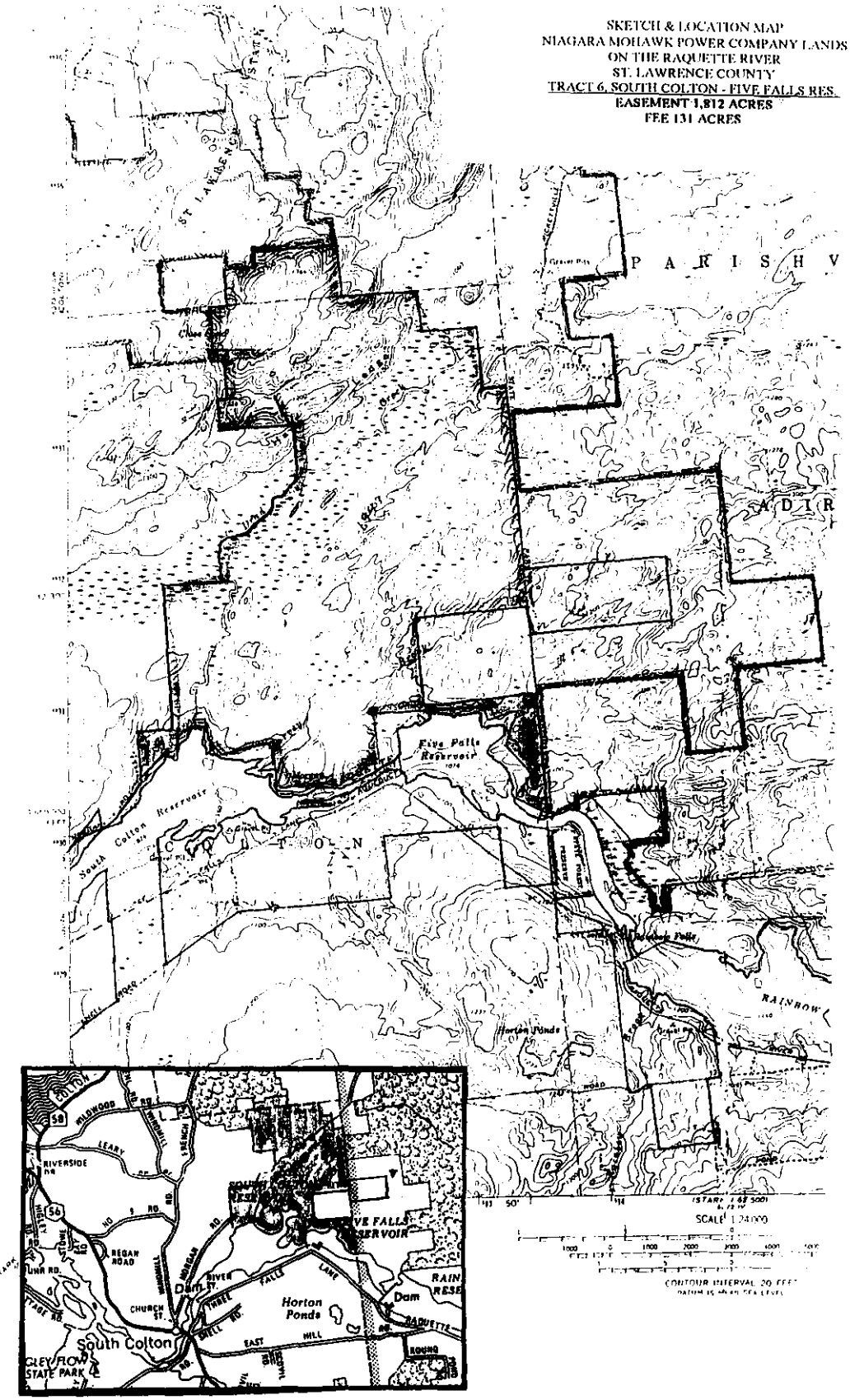

SKETCH & LOCATION MAP
NIAGARA MOHAWK POWER COMPANY LANDS
ON THE RAQUETTE RIVER
ST. LAWRENCE COUNTY
TRACT 3. STARK FALLS RESERVOIR
FEE EAST SIDE 33± ACRES
FEE WEST SIDE 415 ± ACRES
Whispering Pines Camp
Stark Falls Reservoir
Stark Falls Dam
Powerplant
Picnic Area
Gravel Pit
Boat Ramp
STATE FOREST PRESERVE
Cold Pond
Carry Falls Reservoir
Radio Island
RAQUETTE
Joe Indian Pond
Barney Pond
BLAKE FALLS RESERVOIR
STARK FALLS RESERVOIR
CARRY FALLS RESERVOIR

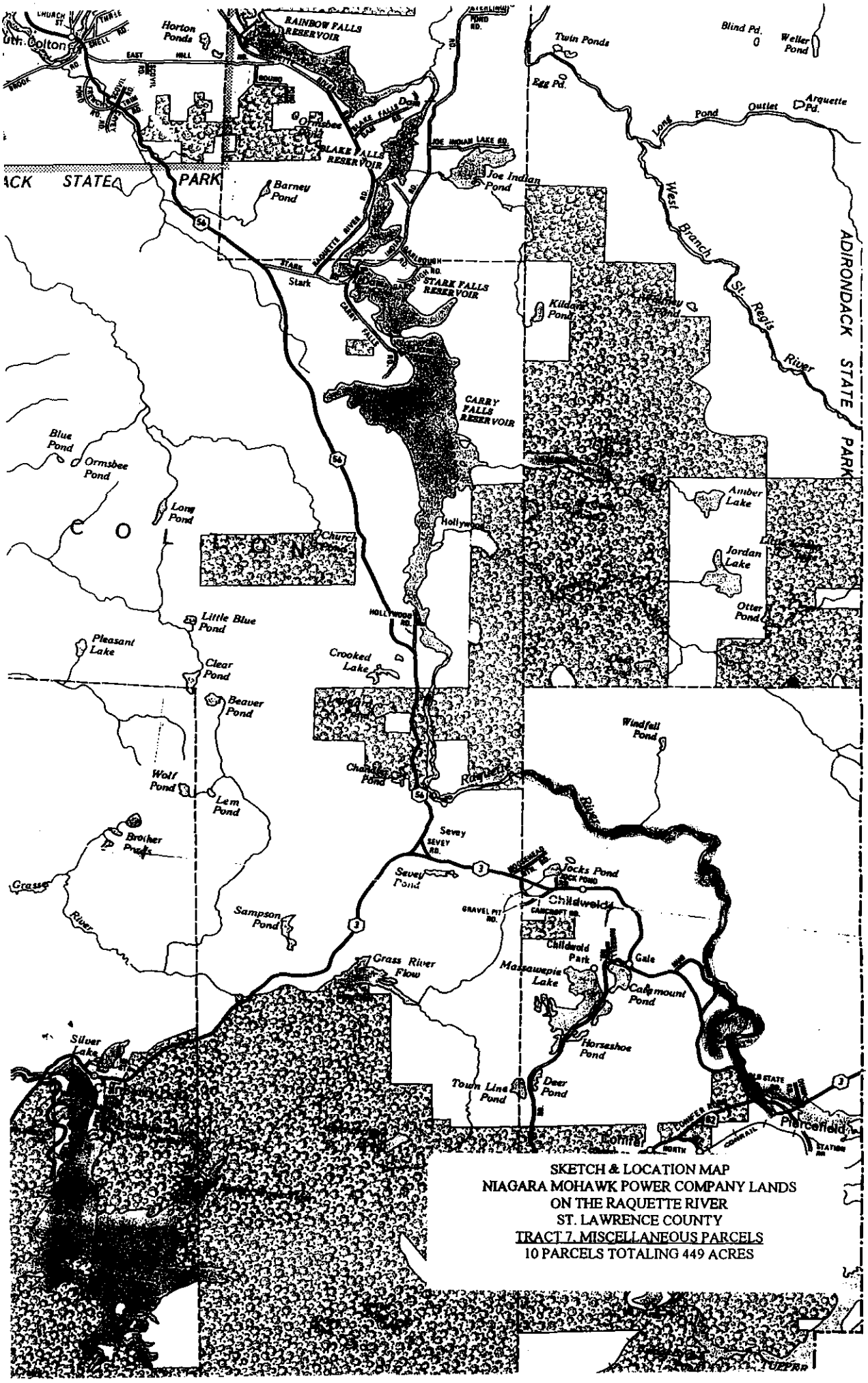


SKETCH & LOCATION MAP
NIAGARA MOHAWK POWER COMPANY LANDS
ON THE RAQUETTE RIVER
ST. LAWRENCE COUNTY
TRACT 4, BLAKE FALLS RESERVOIR
FEE EAST SIDE 400 ACRES
EASEMENT WEST SIDE 1,698± ACRES


SKETCH & LOCATION MAP
NIAGARA MOHAWK POWER COMPANY LANDS
ON THE RAQUETTE RIVER
ST. LAWRENCE COUNTY
TRACT 5. RAINBOW FALLS RESERVOIR
EASEMENT 2,095 ± ACRES
FEE 33 ± ACRES
RAQUETTE RIVER
RAINBOW FALLS RESERVOIR

SKETCH & LOCATION MAP
NIAGARA MOHAWK POWER COMPANY LANDS
ON THE RAQUETTE RIVER
ST. LAWRENCE COUNTY
TRACT 6, SOUTH COLTON - FIVE FALLS RES.
EASEMENT 1,812 ACRES
FEE 131 ACRES




Horton Ponds
RAINBOW FALLS RESERVOIR
Twin Ponds
Blind Pd.
Weller Pond
Egg Pd.
Arquette Pd.
Long Pond Outlet
West Branch St. Regis River
ADIRONDACK STATE PARK
Ormsbee Pond
BLAKE FALLS RESERVOIR
Joe Indian Pond
Barney Pond
Stark
STARK FALLS RESERVOIR
Kildare Pond
Loveday Pond
CARRY FALLS RESERVOIR
Blue Pond
Ormsbee Pond
Long Pond
Hollywood
Amber Lake
Jordan Lake
Otter Pond
Little Blue Pond
Pleasant Lake
Clear Pond
Crooked Lake
Beaver Pond
Windfall Pond
Wolf Pond
Lem Pond
Brother Ponds
Sevey
Sevey Pond
Jocks Pond
Childwold
Childwold Park
Gale
Massawepie Lake
Caldmount Pond
Grass River
Sampson Pond
Grass River Flow
Horseshoe Pond
Silver Lake
Town Line Pond
Deer Pond
Parishville
Potsdam
SKETCH & LOCATION MAP
NIAGARA MOHAWK POWER COMPANY LANDS
ON THE RAQUETTE RIVER
ST. LAWRENCE COUNTY
TRACT 7, MISCELLANEOUS PARCELS
10 PARCELS TOTALING 449 ACRES