

APPENDIX C: 1994 Rye Lake Supply Treatment Study



WESTCHESTER JOINT WATER WORKS

Rye Lake Supply Treatment Study Site Evaluation Report

June 1994

**WESTCHESTER JOINT WATER WORKS
RYE LAKE SUPPLY TREATMENT STUDY
SITE EVALUATION REPORT**

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WESTCHESTER JOINT WATER WORKS RYE LAKE SUPPLY TREATMENT STUDY SITE EVALUATION REPORT

I INTRODUCTION

Westchester Joint Water Works has entered into a stipulation agreement with the New York State Department of Health (NYSDOH) which requires that a report on treatment plant site selection be submitted by June 29, 1994 and an engineering report on the treatment facilities be submitted to NYSDOH by December 29, 1994. This report serves as the Site Evaluation Report.

The purpose of this Site Evaluation Report is to identify possible locations for siting a treatment facility, assess and evaluate these locations, and define a recommended location.

II DATA COMPILATION

Essential to the selection and evaluation of alternative sites was the collection of information from the Town of Harrison and Town of North Castle, the Westchester County Department of Planning and Department of Transportation, the New York State Department of Environmental Conservation, Con Edison, and the County Airport consulting engineers. The information obtained included the following:

- a. USGS maps and aerial photographs.
- b. Town planning and zoning regulations and zoning maps for Harrison and North Castle.
- c. Soil classification maps and soil descriptions.
- d. Floodplain, geological and hydrologic maps.
- e. Federal, State and County wetland maps.
- f. Utility locations including sewer, natural gas and electric.
- g. Real estate values for alternative sites, where available.
- h. Real estate taxes for alternative sites, where available.
- i. Watershed protection draft regulations and related studies.

- j. Westchester County Airport Master Plan.
- k. Westchester County Airport Storm Water Management Plan.
- 1. NYCDEP, Plan of Action and Schedule of Implementation to reduce the risk and potential impact of spills entering the Kensico Reservoir watershed, dated March 31, 1993.

In addition to obtaining the above referenced maps, reports and other data, field investigations were performed for each site. The investigations served to confirm or clarify the information obtained from the maps and reports, and aid in evaluating other items including proximity to neighbors, potential for site screening, etc.

III SITE SELECTION

A. Site Selection Criteria

Alternative sites were identified on the basis of the following criteria:

- 1. Proximity to Resources

Selected sites are within approximately one mile of the Rye Lake Pump Station.

- 2. Hydraulic Considerations

Selected sites are within a total dynamic head (TDH) of 112 feet. This criteria is based on the worst case scenario, which is water elevation of 338 in Rye Lake. This condition of head will enable the pumps at Rye Lake to deliver the proposed minimum flow (15.5 mgd) to the plant without modification.

- 3. Site Size

Selected sites are 3 acres in size for restricted uses and designs, at least 6 acres for typical uses and designs, and at least 8 acres to allow for all uses and designs and future expansion considerations. Consideration is also given to a site adjacent to Rye Lake with less than 3 acres of land available.

- 4. County Boundary

All selected sites are within Westchester County. Due to regulatory complexity and distance from Rye Lake Pump Station, this study did not consider any potential sites crossing the state boundary.

B. Description of Alternative Sites

Based on the above site selection criteria, a total of seven sites were identified for evaluation for a treatment facility. A general description of each site is presented below. The location of each site is presented on Figure 1.

Site No. 1

Site No. 1 is within Westchester County Airport property and is bound by New King Street to the south, an area designated as a development site for general aviation and airport related services in the Westchester County Airport Master Plan to the east, New Lake Street to the west and by the Harrison/North Castle town line to the north. This site is entirely in the Town of Harrison and is identified as Block 971, Lot 2 and Lot 22. A portion of this site has been used in the past by New York State Department of Transportation but the yard is not in use at this time. The Post Office had at one time proposed this site for development.

Site No. 1 is approximately 10.8 acres and consists of areas of steep slope and soils which must be protected in natural condition due to a wetland designation by the United States Army Corps of Engineers. In addition to the wetland designation there is a drainage swale on this site which limits the available area. This site is approximately 4,000 feet from Exit 2 on I-684 with direct access from Route 120. Drainage from this area is directed to Rye Lake. The facility would be located approximately 2,200 feet from the existing transmission main.

Site No. 1A

Site No. 1A is located east of New Lake Street and is situated in the north-west portion of Westchester County Airport. It is bounded by New Lake Street to the west and by New King street to the east. A portion of this site is included in the Westchester County Airport Master Plan to be developed as an airport perimeter road. This site is entirely within the Town of North Castle and is identified as Block 4, Lot 16.

Site No. 1A is approximately 13.6 acres and consists of rocky soils with areas of exposed bedrock. A portion of this area, approximately 4 acres, is designated as a natural ponding area. This site is 2,000 feet from Exit 2 on I-684 with direct access from Route 120. Drainage from this site is directed to Rye Lake. The facility would be located approximately 4,500 feet from the existing transmission main.

Site No. 2

Site No. 2 is located directly on the south shore of Rye Lake in the Town of Harrison and is bound by New Lake Street to the south and adjoins I-684 to the east and is identified as Block 991, Lot 25. It is the property of New York City and is within the

300 feet limiting distance to the reservoir as defined in the proposed watershed regulations.

This site is approximately 2.2 acres and consists of areas of steep slope. This site is 6,000 feet from Exit 2 on I-684 and access is by the service road leading to the Rye Lake Pump Station. Drainage from this site is directed to Rye Lake. The facility would be located approximately 900 feet from the existing transmission main.

Site No. 3

Site No. 3 is located on the south-west portion of the Westchester County Airport in the Town of Harrison, and is bound by Purchase Street to the west and by an airport access road to the south and is identified as Block 971, Lot 8. This area is designated for development for general aviation and airport related uses in the Westchester County Airport Master Plan.

This site is approximately 12.6 acres and is generally level. Approximately 1 acre of this area is occupied by a natural ponding area and a drainage swale which is directed to Rye Lake. This site is 6,000 feet from Exit 2 on I-684 with direct access from Route 120 via Purchase Street. The facility would be located approximately 50 feet from the existing transmission main.

Site No. 4

Site No. 4 is located on the west side of Purchase Street approximately 150 feet south of Kempner Lane in the Town of Harrison. This site is privately owned land and is identified as Block 981, Lot 52. This lot extends from Purchase Street westerly to Kempner Lane and is not currently listed for sale with local realtors.

This site is approximately 6.0 acres and consists of gently sloping and very well drained soils. Drainage from this site is directed away from Rye Lake. This site is 6,000 feet from Exit 2 on I-684 with direct access from Route 120 via Purchase Street. The facility would be located approximately 50 feet from the existing transmission main.

Site No. 5

Site No. 5 is identified as Block 961, Lot 2 and extends easterly from Purchase Street and is situated north of the existing water storage tank. This site is privately owned and although plans for subdivision were developed by the owner, this subdivision is currently not registered for review by the Town's Planning Department. This parcel is currently available for sale and listed with local realtors.

This site is approximately 40.0 acres and consists of gently sloping and well and moderately well drained soils. Drainage from this site is directed away from Rye Lake. This site is 7,000 feet from Exit 2 on I-684 with direct access from Route 120 via

Purchase Street. The facility would be located approximately 150 feet from the existing transmission main.

Site No. 6

Site No. 6 is identified as Block 961, Lot 3 in the Town of Harrison. It is on the east side of Purchase Street located to the east of the water storage tank. A portion of this lot is considered as Site No.6. This plot is not listed for sale with local realtors and is currently considered as part of a major development including a golf course, a country club and residential units. It is anticipated that 3 to 4 subdivision lots located east of the existing storage tank would be required for locating the water treatment facilities.

This site is approximately 8 acres and consists of gently sloping and well and moderately well drained soils. Drainage from this site is directed away from Rye Lake. This site is 7,000 feet from Exit 2 on I-684 with direct access made through the service road leading to the existing storage tank on Purchase Street. The facility would be located approximately 50 feet from the existing transmission main.

IV SITE EVALUATION

Evaluation of alternative sites was based on a weighted matrix approach which integrates the impacts of factors considered including technical, environmental, social, regulatory and economic. All factors considered are assigned a weighted value of their significance ranging from 1 to 5, and is based on the reasoning presented on Table 1. Each factor also was assessed by assigning a value to project impact, based on the duration of impact and the magnitude of the impact. Project impacts were rated using the values presented on Table 2. With this rating system the preferred site is the one with the most positive impact.

The evaluation of the water treatment facility siting considered the following factors:

A. TECHNICAL

Under the technical component each site was evaluated based on the area of land available to permit typical functions and designs. Additional area for future expansion was also considered. In addition slopes and soil characteristics of each site were reviewed for constructibility. The proximity to supporting utilities (sewer, gas, electric) and highway/road access to the site were also evaluated.

B. ENVIRONMENTAL

In order to evaluate the impact of the environmental components of the project Federal, State and local wetland maps were obtained and the existence or proximity of wetland areas to the sites were reviewed. In addition, all selected sites were assessed for 100 year frequency flood elevation. The impact of potential sedimentation and erosion during construction, and site drainage considerations on water quality of the nearby Rye Lake was also reviewed for each of the sites.

C. SOCIAL

The current zoning of the sites include special business, industrial and residential. Siting the facility in a residential zone is considered the most difficult from the perspective of town and public. Based on the National Register of Historic Places, the potential sites are not listed as an archaeological or historic place but it is suggested in the Westchester County Airport Master Plan that a stage 1B survey should be performed in the virgin areas on the north part of the airport. This area coincides with the location of Site No. 1A in the Town of North Castle.

The proximity to residential areas as well as the traffic impact during and after the construction period were evaluated for each site. Public acceptability was assumed negative for all selected sites with less negative impact for the sites on airport property due to current business and industrial zoning designations.

D. REGULATORY

Regulatory factors examined for this evaluation include the Final Environmental Impact Statement for the Proposed Watershed Regulations issued by New York City Department of Environmental Protection in November 1993. As stated in these regulations (§ 128-3.9) "the construction of an impervious surface within the limiting distance of 100 feet of a watercourse or wetland, or within the limiting distance of 300 feet of a reservoir, reservoir stem, or controlled lake is prohibited". This regulation has an effect on sites that are within these limiting distances.

Planning and zoning regulations in the Towns of Harrison and North Castle were also obtained to identify setback requirements, building height restrictions, and permitting requirements for construction of the water treatment facility. A summary of these requirements is presented in Tables 3 and 4, respectively.

E. ECONOMIC

For the economic evaluation the facility construction cost and the additional pumping requirements from the potential sites to the storage facility at Purchase Street has been assumed equal for all sites. Land acquisition costs and real estate taxes have been compiled for privately owned locations (Site Nos. 4, 5 and 6). Land acquisition cost for County owned airport land is estimated on a rate of \$80,000 per acre which is approximately the average cost of land in the area. Water main cost for all sites is estimated based on the linear footage of main needed from the existing 36" water main, to and from the site. It should be noted that economic ranking is based on land acquisition and water main installation costs and the lower expenditure was considered to have the most positive impact.

Based on these factors and the weighted value assigned to each factor a rating has been developed for each site and included as Tables 5 through 11. To develop the total value of each factor presented in these tables, the factor value is multiplied by the weighting factor. The sum of the total values listed in these tables for each factor provides the overall rating for the site alternative. The background for the evaluation of technical, environmental, social, regulatory and economic considerations for each site alternative is included in Appendix A, attached at the end of this report.

V RANKING OF ALTERNATIVES

Based on the rating system discussed in Section IV of this report, the overall ranking of the alternatives were developed and is presented below:

<u>Rank</u>	<u>Site</u>	<u>RATING VALUE</u>
1	No. 3	+76
2	No. 5	+50
3	No. 6	+38
4	No. 4	+2
5	No. 1A	-1
6	No. 1	-4
7	No. 2	-34

The above indicates that Site No. 3 has the highest ranking of all alternative sites. Site No. 5 has the second highest ranking overall, and the highest ranking of sites considered on privately owned land.

VI SUMMARY AND RECOMMENDATIONS

Seven alternative locations in the vicinity of Rye Lake Pump Station were identified and evaluated to determine the preferable location for siting a water treatment facility. Three of the sites are located within the Westchester County Airport boundary, one site is on the south shore of Rye Lake, two sites are adjacent to the Westchester Joint Water Works Purchase Street storage tank, and one site is situated west of Purchase Street across from the Airport. The locations of all sites are presented on Figure 1.

A weighted matrix approach was used to integrate impacts on technical, environmental, social, regulatory and economic factors. A range of project impacts were assessed and an overall ranking for each site has been established (Tables 5-11).

Based on the ranking system, Site No. 3 located in the south-west corner of the Westchester County Airport is the preferred alternative. Site No. 3 is located on County owned land in an area that is designated for general aviation facility improvements in the Airport Master Plan. The major advantages of this site include:

1. Close proximity to the existing water mains on Purchase Street which will minimize the cost of connecting mains.
2. Zoning of airport property.
3. Sufficient land available and a relatively level site.
4. Existing trees will likely be sufficient to provide adequate buffer to local residents.

Site No. 3 is superior to the other potential sites located on airport property (Site Nos. 1 and 1A). Discussions with airport authorities need to be initiated to determine if the property could be made available by the airport for construction of the water treatment facilities.

The alternative with the next highest rating value is Site No. 5. This site is privately owned land located directly north of the existing Purchase Street Storage Tank. Site No. 5 has the same advantages listed for Site No. 3 with the exception of zoning. Site No. 5 is located within a residential zone which decreased its ranking when compared to Site No. 3 for the factors relating to zoning and proximity to neighbors. Also, the parcel is 40 acres which is considerably more area than needed. This site is penalized compared to Site No. 3 because it is assumed that all 40 acres must be acquired at market value. For Site No. 3 it is assumed that only the required amount of land will be acquired at market value. This relates to a difference in the ranking of the two sites for land acquisition costs.

Site No. 6 is the third highest ranked alternative. This site is located east of the existing Purchase Street Storage Tank within the residential subdivision which is presently approved and beginning construction. Several lots proposed for development in the subdivision would be needed for the treatment facility site. Since the lots for this subdivision are designed and approved by the Town it is believed that obtaining these lots from the developer would be extremely difficult. In addition, Westchester Joint Water Works has obtained land from the same developer for the construction of the new storage tank at Purchase Street. Attempting to obtain land from the developer for the treatment facility site could strain the relationship established for obtaining the needed land for the new storage tank. For this reason, Site No. 6 is not considered feasible.

In summary, if County Airport land is made available at the location designated as Site No. 3, then this site is the preferred location for the treatment facility. If this Airport land is not made available or if land can not be committed to be available for an extensive time duration, then Site No. 5 is the preferred alternative. Since the land for Site No. 5 is presently for sale, obtaining this property would have fewer parties involved with potentially a reduced regulatory complexity when compared to obtaining the Airport land.

**WESTCHESTER JOINT WATER WORKS
RYE LAKE SUPPLY TREATMENT STUDY
SITE EVALUATION REPORT
TABLE 1**

WEIGHTING OF PROJECT FACTORS

Factor	Weighting Factor	Reasoning For Weighting Factor Assigned
Technical		
Constructibility	3	Average Weight Assigned. Constructibility will have some impact on construction cost and schedule.
Subsurface Conditions (Soil, Rock, Groundwater)	4	Above Average Weight Assigned. Subsurface conditions will have a substantial impact on construction cost, schedule and facility design considerations.
Proximity to Supporting Utilities (Sewer, Electric, etc.)	3	Average Weight Assigned. Proximity to utilities may impact the handling of process waste streams.
Highway / Road Access	4	Above Average Weight Assigned. Ability to enable construction and post construction vehicles to access site is of significance. Safety of access route is also of significance.
Site Slope	4	Above Average Weight Assigned. Site slope will effect constructibility, facility location on site, and access road.
Process Restriction Due to Site Size	5	Major Weight Assigned. Selecting process and making other design decisions based on site size is not recommended.
Potential for Future Expansion	5	Major Weight Assigned. Land for future expansion will provide for the most cost effective way to provide additional treatment.
Environmental		
Wetlands	5	Major Weight Assigned. Major significance on permitting, environmental considerations, and site area available for construction purposes.
Sediment and Erosion Control Considerations	3	Average Weight Assigned. Sediment and erosion control measures can be implemented during construction to protect site.
Site Drainage Considerations	3	Average Weight Assigned. Site drainage can be collected and released in a controlled manner from the site.
100 Year Floodplain	2	Below Average Weight Assigned. Flood water elevation can be considered during facility design without significant impact on project cost and facility siting.
Social		
Current Zoning Regulations	1	Minor Weight Assigned. Westchester Joint Water Works will attempt to work within Town Planning and Zoning regulations, but are not required to comply with regulations.
Present Use of Site	2	Below Average Weight Assigned. All sites selected for evaluation are currently undeveloped.
Archeological / Historical Significance	1	Minor Weight Assigned. Sites with archeological significance could still be developed.
Proximity to Neighbors (visual ; noise)	3	Average Weight Assigned. Proximity to neighbors may have a considerable impact on the time required to plan and design the facility at a given site.
Traffic Impact on Neighbors (pre and post construction)	3	Average Weight Assigned. Higher vehicle activity during facility construction will be offset by a small change in vehicle activity once the facility is operating.
Public Acceptability	3	Average Weight Assigned. Public acceptability may have considerable impact on the time required to plan and design the facility at a given site.
Regulatory		
Permit Requirements	1	Minor Weight Assigned. Cost and effort to obtain necessary permits is small compared to construction cost considerations.
Regulatory Complexity	2	Below Average Weight Assigned. Regulatory complexity may increase the time duration to select a site and prepare a facility design, but should not impact construction cost or duration.
Economic		
Land Acquisition Cost	5	Major Weight Assigned. Financing of land acquisition cost will increase the cost to ratepayers.
Facility Construction Cost	5	Major Weight Assigned. Financing of land acquisition cost will increase the cost to ratepayers.
Pipeline Construction Cost	5	Major Weight Assigned. Financing of land acquisition cost will increase the cost to ratepayers.

**WESTCHESTER JOINT WATER WORKS
 RYE LAKE SUPPLY TREATMENT STUDY
 SITE EVALUATION REPORT
 TABLE 2**

Impact Designation of Project Factors

Factor	Value	Impact Designation
This column presents the factors that will be considered		
	0	Perceived but Not Actual Impact
	- 1	Short Term, Minor Negative
	+ 1	Short Term, Minor Positive
	- 2	Long Term, Minor Negative
	+ 2	Long Term, Minor Positive
	- 3	Short Term, Major Negative
	+ 3	Short Term, Major Positive
	- 4	Long Term, Major Negative
	+ 4	Long Term, Major Positive

**WESTCHESTER JOINT WATER WORKS
RYE LAKE SUPPLY TREATMENT STUDY
SITE EVALUATION REPORT
TABLE 3**

**Town of Harrison Planning and Zoning Regulations
Business (SB-0) and Residential (R-2.5) Districts**

Planning and Zoning Requirements	SB-0 ⁽¹⁾	R - 2.5 ⁽²⁾
Lot Area (Minimum)	5 Acres	2.5 Acres
Lot Coverage		
Maximum building coverage	20%	10%
Lot Width (minimum)	300 feet	200 feet
Required Yard (minimum)		
Front	50 feet	50 feet
Side	75 -100 feet *	50 feet
Rear	100 feet	150 feet
Building Height	55 feet	26 feet
Maximum Number of Stories	4	2.5
Floor Area Ratio	-	NA
Buffer Areas		
Front yard adjoining residence districts	50 feet	
Front yard adjoining business districts	25 feet	
Side and rear yard adjoining residence districts	50 feet	
Side and rear yard adjoining business districts	50 feet	
Permit Requirements	Special	Special
Planning Board Approval	Yes	Yes
Public Hearing	Yes	Yes
Town Board Approval	Yes	Yes

*** 75 feet adjoining a business district and 100 feet adjoining a residence**

(¹) Sites 1 and 3.

(²) Sites 2, 4, 5 and 6.

**WESTCHESTER JOINT WATER WORKS
RYE LAKE SUPPLY TREATMENT STUDY
SITE EVALUATION REPORT
TABLE 4**

**Town of North Castle Planning and Zoning Regulations
Industrial AA (IND-AA) District**

Planning and Zoning Requirements	IND-AA⁽¹⁾
Lot Area (Minimum)	2 Acres
Lot Coverage	
Maximum building coverage	60%
Lot Width (minimum)	200 feet
Required Yard (minimum)	
Front	50 feet
Site	50 feet
Rear	50 feet
Building Height	30 feet
Maximum Number of Stories	2
Floor Area Ratio	0.30
Permit Requirements	Special
Planning Board Approval	Yes
Public Hearing	Yes
Town Board Approval	Yes

(¹) Site 1A.

Note: Industrial uses using electric power and natural gas, and/or propane, are subject to approval of a special use permit and in compliance with the conditions set forth in §§ 213-26 through 213-32 of the zoning regulations of the Town of North Castle, where the use is conducted within fully enclosed building and the nature of the use is such that normally it will not be dangerous to the comfort, peace, enjoyment, health or safety of the community and that it will be in harmony with the appropriate and orderly development of the district in which is situated and adjacent districts. The planning Board may impose any conditions of use in order to ensure compliance with the purpose and intent of such standards and performance standards as set forth in Article X of the Town's zoning regulations.

**WESTCHESTER JOINT WATER WORKS
RYE LAKE SUPPLY TREATMENT STUDY
SITE EVALUTION REPORT
TABLE 5**

SITE No. 1 RANKING

Location: Town of Harrison
Airport property on the east side of Route 120

Factor	Factor Value	Impact Designation	Weighting Factor	Total Value
Technical				
Constructibility	- 1	Short Term, Minor Negative	3	-3
Subsurface Conditions (Soil, Rock, Groundwater)	+ 1	Short Term, Minor Positive	4	4
Proximity to Supporting Utilities (Sewer, Electric, etc.)	-3	Short Term, Major Negative	3	-9
Highway / Road Access	+4	Long Term, Major Positive	4	16
Site Slope	-3	Short Term, Major Negative	4	-12
Process Restriction Due to Site Size	+2	Long Term, Minor Positive	5	10
Potential for Future Expansion	+2	Long Term, Minor Positive	5	10
Environmental				
Wetlands	-2	Long Term, Minor Negative	5	-10
Sediment and Erosion Control Considerations	-3	Short Term, Major Negative	3	-9
Site Drainage Considerations	-4	Long Term, Major Negative	3	-12
100 Year Floodplain	0	Perceived but Not Actual Impact	2	0
Social				
Current Zoning Regulations	+3	Short Term, Major Positive	1	3
Present Use of Site	+3	Short Term, Major Positive	2	6
Archeological / Historical Significance	0	Perceived but Not Actual Impact	1	0
Proximity to Neighbors (visual ; noise)	+4	Long Term, Major Positive	3	12
Traffic Impact on Neighbors (pre and post construction)	0	Perceived but Not Actual Impact	3	0
Public Acceptability	-1	Short Term, Minor Negative	3	-3
Regulatory				
Permit Requirements	- 1	Short Term, Minor Negative	1	-1
Regulatory Complexity	-3	Short Term, Major Negative	2	-6
Economic (1)				
Land Acquisition Cost	+ 2	Long Term, Minor Positive	5	10
Facility Construction Cost (2)	0	Perceived but Not Actual Impact	5	0
Pipeline Construction Cost	-2	Long Term, Minor Negative	5	-10
Overall Rating				-4

- (1) Economic Ranking is based on expenditure (the lowest expenditure has the most positive impact).
 (2) Facility Construction Cost has been assumed equal for all sites.

**WESTCHESTER JOINT WATER WORKS
RYE LAKE SUPPLY TREATMENT STUDY
SITE EVALUATION REPORT
TABLE 6**

SITE No. 1A RANKING

Location: Town of North Castle
Airport property on the east side of Route 120

Factor	Factor Value	Impact Designation	Weighting Factor	Total Value
Technical				
Constructibility	+ 1	Short Term, Minor Positive	3	3
Subsurface Conditions (Soil, Rock, Groundwater)	- 3	Short Term, Major Negative	4	-12
Proximity to Supporting Utilities (Sewer, Electric, etc.)	- 3	Short Term, Major Negative	3	-9
Highway / Road Access	+ 4	Long Term, Major Positive	4	16
Site Slope	- 1	Short Term, Minor Negative	4	-4
Process Restriction Due to Site Size	+ 4	Long Term, Major Positive	5	20
Potential for Future Expansion	+ 4	Long Term, Major Positive	5	20
Environmental				
Wetlands	- 4	Long Term, Major Negative	5	-20
Sediment and Erosion Control Considerations	- 1	Short Term, Minor Negative	3	-3
Site Drainage Considerations	- 4	Long Term, Major Negative	3	-12
100 Year Floodplain	0	Perceived but Not Actual Impact	2	0
Social				
Current Zoning Regulations	+ 3	Short Term, Major Positive	1	3
Present Use of Site	+ 3	Short Term, Major Positive	2	6
Archeological / Historical Significance	- 1	Short Term, Minor Negative	1	-1
Proximity to Neighbors (visual ; noise)	+ 4	Long Term, Major Positive	3	12
Traffic Impact on Neighbors (pre and post construction)	0	Perceived but Not Actual Impact	3	0
Public Acceptability	- 1	Short Term, Minor Negative	3	-3
Regulatory				
Permit Requirements	- 1	Short Term, Minor Negative	1	-1
Regulatory Complexity	- 3	Short Term, Major Negative	2	-6
Economic(1)				
Land Acquisition Cost	+ 2	Long Term, Minor Positive	5	10
Facility Construction Cost(2)	0	Perceived but Not Actual Impact	5	0
Pipeline Construction Cost	- 4	Long Term, Major Negative	5	-20
Overall Rating				-1

(1) Economic Ranking is based on expenditure (the lowest expenditure has the most positive impact).

(2) Facility Construction Cost has been assumed equal for all sites.

**WESTCHESTER JOINT WATER WORKS
RYE LAKE SUPPLY TREATMENT STUDY
SITE EVALUATION REPORT
TABLE 7**

SITE No. 2 RANKING

Location: Town of Harrison
New York City/ Westchester County property
Site Adjacent to Rye Lake

Factor	Factor Value	Impact Designation	Weighting Factor	Total Value
Technical				
Constructibility	+ 3	Short Term, Major Positive	3	9
Subsurface Conditions (Soil, Rock, Groundwater)	+ 3	Short Term, Major Positive	4	12
Proximity to Supporting Utilities (Sewer, Electric, etc.)	- 1	Short Term, Minor Negative	3	-3
Highway / Road Access	+ 4	Long Term, Major Positive	4	16
Site Slope	- 1	Short Term, Minor Negative	4	-4
Process Restriction Due to Site Size	- 4	Long Term, Major Negative	5	-20
Potential for Future Expansion	- 4	Long Term, Major Negative	5	-20
Environmental				
Wetlands	0	Perceived but Not Actual Impact	5	0
Sediment and Erosion Control Considerations	- 1	Short Term, Minor Negative	3	-3
Site Drainage Considerations	- 4	Long Term, Major Negative	3	-12
100 Year Floodplain	0	Perceived but Not Actual Impact	2	0
Social				
Current Zoning Regulations	- 3	Short Term, Major Negative	1	-3
Present Use of Site	+ 3	Short Term, Major Positive	2	6
Archeological / Historical Significance	0	Perceived but Not Actual Impact	1	0
Proximity to Neighbors (visual ; noise)	- 2	Long Term, Minor Negative	3	-6
Traffic Impact on Neighbors (pre and post construction)	0	Perceived but Not Actual Impact	3	0
Public Acceptability	- 3	Short Term, Major Negative	3	-9
Regulatory				
Permit Requirements	- 1	Short Term, Minor Negative	1	-1
Regulatory Complexity	- 3	Short Term, Major Negative	2	-6
Economic(1)				
Land Acquisition Cost	+ 4	Long Term, Major Positive	5	20
Facility Construction Cost(2)	0	Perceived but Not Actual Impact	5	0
Pipeline Construction Cost	- 2	Long Term, Minor Negative	5	-10
Overall Rating				-34

- (1) Economic Ranking is based on expenditure (the lowest expenditure has the most positive impact).
(2) Facility Construction Cost has been assumed equal for all sites.

**WESTCHESTER JOINT WATER WORKS
RYE LAKE SUPPLY TREATMENT STUDY
SITE EVALUATION REPORT
TABLE 8**

SITE No. 3 RANKING

Location: Town of Harrison
Airport property along Purchase Street

Factor	Factor Value	Impact Designation	Weighting Factor	Total Value
Technical				
Constructibility	+3	Short Term, Major Positive	3	9
Subsurface Conditions (Soil, Rock, Groundwater)	+1	Short Term, Minor Positive	4	4
Proximity to Supporting Utilities (Sewer, Electric, etc.)	+1	Short Term, Minor Positive	3	3
Highway / Road Access	+2	Long Term, Minor Positive	4	8
Site Slope	+1	Short Term, Minor Positive	4	4
Process Restriction Due to Site Size	+4	Long Term, Major Positive	5	20
Potential for Future Expansion	+4	Long Term, Major Positive	5	20
Environmental				
Wetlands	0	Perceived but Not Actual Impact	5	0
Sediment and Erosion Control Considerations	-1	Short Term, Minor Negative	3	-3
Site Drainage Considerations	-2	Long Term, Minor Negative	3	-6
100 Year Floodplain	0	Perceived but Not Actual Impact	2	0
Social				
Current Zoning Regulations	+3	Short Term, Major Positive	1	3
Present Use of Site	+3	Short Term, Major Positive	2	6
Archeological / Historical Significance	0	Perceived but Not Actual Impact	1	0
Proximity to Neighbors (visual ; noise)	-2	Long Term, Minor Negative	3	-6
Traffic Impact on Neighbors (pre and post construction)	-2	Long Term, Minor Negative	3	-6
Public Acceptability	-1	Short Term, Minor Negative	3	-3
Regulatory				
Permit Requirements	-1	Short Term, Minor Negative	1	-1
Regulatory Complexity	-3	Short Term, Major Negative	2	-6
Economic(1)				
Land Acquisition Cost	+2	Long Term, Minor Positive	5	10
Facility Construction Cost(2)	0	Perceived but Not Actual Impact	5	0
Pipeline Construction Cost	+4	Long Term, Major Positive	5	20
Overall Rating				76

(1) Economic Ranking is based on expenditure (the lowest expenditure has the most positive impact).

(2) Facility Construction Cost has been assumed equal for all sites.

**WESTCHESTER JOINT WATER WORKS
RYE LAKE SUPPLY TREATMENT STUDY
SITE EVALUATION REPORT
TABLE 9**

SITE No. 4 RANKING

Location: Town of Harrison
Private Property Along West Side of Purchase Street
Residential Area R2.5

Factor	Factor Value	Impact Designation	Weighting Factor	Total Value
Technical				
Constructibility	+3	Short Term, Major Positive	3	9
Subsurface Conditions (Soil, Rock, Groundwater)	+1	Short Term, Minor Positive	4	4
Proximity to Supporting Utilities (Sewer, Electric, etc.)	-1	Short Term, Minor Negative	3	-3
Highway / Road Access	+2	Long Term, Minor Positive	4	8
Site Slope	+1	Short Term, Minor Positive	4	4
Process Restriction Due to Site Size	+4	Long Term, Major Positive	5	20
Potential for Future Expansion	-2	Long Term, Minor Negative	5	-10
Environmental				
Wetlands	0	Perceived but Not Actual Impact	5	0
Sediment and Erosion Control Considerations	-1	Short Term, Minor Negative	3	-3
Site Drainage Considerations	-2	Long Term, Minor Negative	3	-6
100 Year Floodplain	0	Perceived but Not Actual Impact	2	0
Social				
Current Zoning Regulations	-3	Short Term, Major Negative	1	-3
Present Use of Site	+1	Short Term, Minor Positive	2	2
Archeological / Historical Significance	0	Perceived but Not Actual Impact	1	0
Proximity to Neighbors (visual ; noise)	-4	Long Term, Major Negative	3	-12
Traffic Impact on Neighbors (pre and post construction)	-2	Long Term, Minor Negative	3	-6
Public Acceptability	-3	Short Term, Major Negative	3	-9
Regulatory				
Permit Requirements	-1	Short Term, Minor Negative	1	-1
Regulatory Complexity	-1	Short Term, Minor Negative	2	-2
Economic(1)				
Land Acquisition Cost	-2	Long Term, Minor Negative	5	-10
Facility Construction Cost(2)	0	Perceived but Not Actual Impact	5	0
Pipeline Construction Cost	+4	Long Term, Major Positive	5	20
Overall Rating				2

(1) Economic Ranking is based on expenditure (the lowest expenditure has the most positive impact).

(2) Facility Construction Cost has been assumed equal for all sites.

**WESTCHESTER JOINT WATER WORKS
RYE LAKE SUPPLY TREATMENT STUDY
SITE EVALUATION REPORT
TABLE 10**

SITE No. 5 RANKING

Location: Town of Harrison
Private Property Along East Side of Purchase Street
Residential Area R2.5 (North of Water Storage Tank)

Factor	Factor Value	Impact Designation	Weighting Factor	Total Value
Technical				
Constructibility	+3	Short Term, Major Positive	3	9
Subsurface Conditions (Soil, Rock, Groundwater)	+3	Short Term, Major Positive	4	12
Proximity to Supporting Utilities (Sewer, Electric, etc.)	+1	Short Term, Minor Positive	3	3
Highway / Road Access	+2	Long Term, Minor Positive	4	8
Site Slope	+1	Short Term, Minor Positive	4	4
Process Restriction Due to Site Size	+4	Long Term, Major Positive	5	20
Potential for Future Expansion	+4	Long Term, Major Positive	5	20
Environmental				
Wetlands	0	Perceived but Not Actual Impact	5	0
Sediment and Erosion Control Considerations	-1	Short Term, Minor Negative	3	-3
Site Drainage Considerations	-2	Long Term, Minor Negative	3	-6
100 Year Floodplain	0	Perceived but Not Actual Impact	2	0
Social				
Current Zoning Regulations	-3	Short Term, Major Negative	1	-3
Present Use of Site	+3	Short Term, Major Positive	2	6
Archeological / Historical Significance	0	Perceived but Not Actual Impact	1	0
Proximity to Neighbors (visual ; noise)	-4	Long Term, Major Negative	3	-12
Traffic Impact on Neighbors (pre and post construction)	-2	Long Term, Minor Negative	3	-6
Public Acceptability	-3	Short Term, Major Negative	3	-9
Regulatory				
Permit Requirements	-1	Short Term, Minor Negative	1	-1
Regulatory Complexity	-1	Short Term, Minor Negative	2	-2
Economic(1)				
Land Acquisition Cost	-2	Long Term, Minor Negative	5	-10
Facility Construction Cost(2)	0	Perceived but Not Actual Impact	5	0
Pipeline Construction Cost	+4	Long Term, Major Positive	5	20
Overall Rating				50

(1) Economic Ranking is based on expenditure (the lowest expenditure has the most positive impact).

(2) Facility Construction Cost has been assumed equal for all sites.

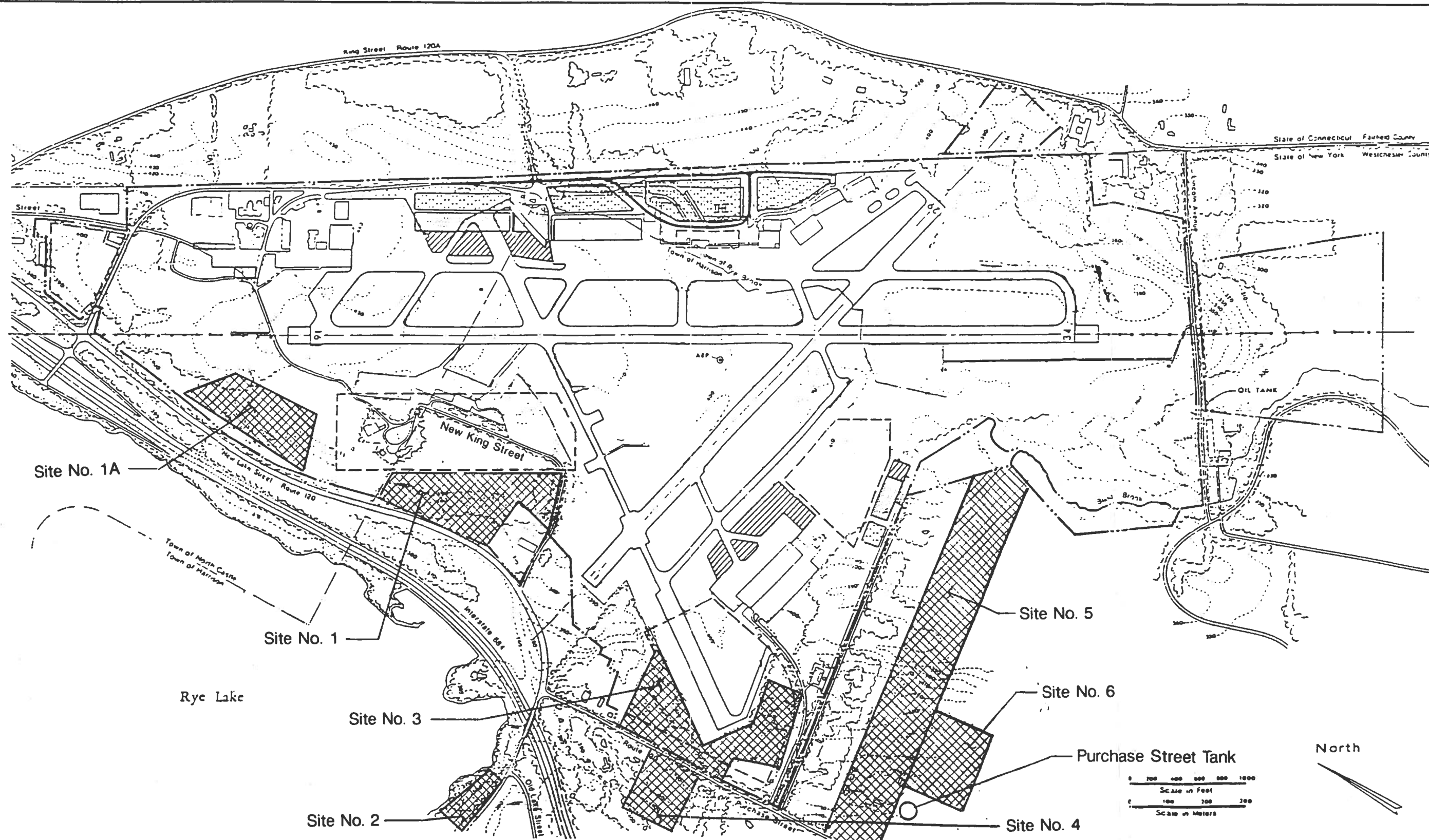
**WESTCHESTER JOINT WATER WORKS
RYE LAKE SUPPLY TREATMENT STUDY
SITE EVALUATION REPORT
TABLE 11**

SITE No. 6 RANKING

Location: Town of Harrison
Private Property Along East Side of Purchase Street
Residential Area R2.5 (East of Water Storage Tank)

Factor	Factor Value	Impact Designation	Weighting Factor	Total Value
Technical				
Constructibility	+3	Short Term, Major Positive	3	9
Subsurface Conditions (Soil, Rock, Groundwater)	+3	Short Term, Major Positive	4	12
Proximity to Supporting Utilities (Sewer, Electric, etc.)	+1	Short Term, Minor Positive	3	3
Highway / Road Access	+2	Long Term, Minor Positive	4	8
Site Slope	+1	Short Term, Minor Positive	4	4
Process Restriction Due to Site Size	+4	Long Term, Major Positive	5	20
Potential for Future Expansion	+4	Long Term, Major Positive	5	20
Environmental				
Wetlands	0	Perceived but Not Actual Impact	5	0
Sediment and Erosion Control Considerations	-1	Short Term, Minor Negative	3	-3
Site Drainage Considerations	-2	Long Term, Minor Negative	3	-6
100 Year Floodplain	0	Perceived but Not Actual Impact	2	0
Social				
Current Zoning Regulations	-3	Short Term, Major Negative	1	-3
Present Use of Site	-3	Short Term, Major Negative	2	-6
Archeological / Historical Significance	0	Perceived but Not Actual Impact	1	0
Proximity to Neighbors (visual ; noise)	-4	Long Term, Major Negative	3	-12
Traffic Impact on Neighbors (pre and post construction)	-2	Long Term, Minor Negative	3	-6
Public Acceptability	-3	Short Term, Major Negative	3	-9
Regulatory				
Permit Requirements	-1	Short Term, Minor Negative	1	-1
Regulatory Complexity	-1	Short Term, Minor Negative	2	-2
Economic(1)				
Land Acquisition Cost	-2	Long Term , Minor Negative	5	-10
Facility Construction Cost	0	Perceived but Not Actual Impact	5	0
Pipeline Construction Cost	+4	Long Term, Major Positive	5	20
Overall Rating				38

- (1) Economic Ranking is based on expenditure (the lowest expenditure has the most positive impact).
(2) Facility Construction Cost has been assumed equal for all sites.



- Airport Boundary
- ▨ Site Location
- - - Area Proposed For Future Airport Development

HAZEN AND SAWYER
Environmental Engineers & Scientists

HAZEN AND SAWYER, P.C. • 730 BROADWAY • NEW YORK, NEW YORK 10003

Westchester Joint Water Works
Rye Lake Supply Treatment Study
Site Evaluation Report

Site Location Plan

Figure 1

WESTCHESTER JOINT WATER WORKS
RYE LAKE SUPPLY TREATMENT STUDY
SITE EVALUTION REPORT

APPENDIX A

ANALYSIS OF SITE No. 1

Location: Town of Harrison
Airport property on the east side of Route 120

Soil Classification:

- PnB:** Paxton fine sandy loam, 2-8% slopes, Hydrologic group C
This soil is gently sloping, very deep and well drained. It is on broad ridges and small hills.
- Soil Properties:**
- | | |
|-----------------------------|---|
| Water table: | perched above the dense substratum at a depth of 1.5-2.5 feet (Feb- April) |
| Permeability: | moderate (06-2.0 in/hr) in the surface layer and subsoil, and very slow in the substratum < 0.2 in/hr |
| Surface runoff: | medium |
| Available water capacity: | moderate |
| Flooding hazard: | none |
| Erosion: | slight |
| Depth to bedrock: | more than 60 inches |
| Percent of total site area: | 38% |
- PnC:** Paxton fine sandy loam, 8-15% slopes, Hydrologic group C, Farmland of State Importance.
This soil is strongly sloping, very deep and well drained. It is on the sides and tops of broad ridges and small hills.
- Soil Properties:**
- | | |
|-----------------------------|---|
| Water table: | perched above the dense substratum at a depth of 1.5-2.5 feet (Feb- April) |
| Permeability: | moderate (06-2.0 in/hr) in the surface layer and subsoil, and very slow in the substratum < 0.2 in/hr |
| Surface runoff: | medium |
| Available water capacity: | moderate |
| Flooding hazard: | none |
| Erosion hazard: | moderate |
| Depth to bedrock: | more than 60 inches |
| Percent of total site area: | 20% |
- LcB:** Leicester Loam, 3-8% slopes, Stony
If Wetland protect in natural condition. Hydrologic group C
This soil is gently sloping, very deep, and somewhat poorly drained and poorly drained. It is on the lower parts of hillsides and along small drainage ways in bedrock controlled areas. Stones greater than 10 inches in diameter occupy 0.01 to 0.1 percent of the surface and are 25 to 75 feet apart.
- Soil Properties:**
- | | |
|-----------------------------|--|
| Water Table: | 0 -1.5 feet below surface (Nov-May) |
| Permeability: | moderate to moderately rapid (0.6-6.0 in/hr) in the surface and subsoil , and moderate to rapid (0.6-2.0 in/hr) in the substratum. |
| Available water capacity: | moderate |
| Surface runoff: | medium |
| Flooding hazard: | - |
| Erosion hazard: | moderate |
| Depth to bedrock: | more than 60 inches |
| Percent of total site area: | 30% |
- Sh:** Sun Loam, hydrologic group D, if wetland, protect in natural condition.
This nearly level soil is very deep and poorly drained to very poorly drained. It is in small depressions and along drainage ways on till plains.
- Soil Properties:**
- | | |
|-----------------------------|---|
| Water Table: | 1.0 foot above to 0.5 feet below the surface (Nov-Apr) |
| Permeability: | moderate (0.6-2.0 in/hr) in the surface layer and slow or very slow (<0.2 in/hr) in the subsoil and substratum. |
| Available water capacity: | - |
| Surface runoff: | very slow |
| Flooding hazard: | none |
| Erosion hazard: | none to slight |
| Depth to bedrock: | more than 60 inches |
| Percent of total site area: | 10% |

ANALYSIS OF SITE No. 1

Location: Town of Harrison
Airport property on the east side of Route 120

Ub: Udorthents, smoothed
This unit consists of very deep, excessively drained to moderately well drained soil areas that have been altered by cutting and filling. It consists of soil material in alternate layers, ranging from sand to silt loam. Slopes are mainly 3 to 15 percent, but range from 0 to 25 percent, with the steeper slopes on the sides of the unit. The fill material is often greater than 20 inches thick over the original soil. Rock fragment content ranges from 0 to 60 percent.
The properties and characteristics of this unit are so variable that an on-site investigation and evaluation is required to determine the suitability and limitations for proposed uses.

Percent of total site area: 2%

Technical:

Constructibility: Construction on this site may be hindered due to steep site slopes and designated wetland areas.

Future Expansion: Drainage ditch may limit available space even if all available space is acquired. $0.5 \times (1000 \times 600) + 0.5 \times (1200 \times 100) + 0.5 \times (120 \times 500) + 0.5 \times (400 \times 400) = 470,000 \text{ sf} = 10.8 \text{ Acres}$
2.8 acres are designated as wetland area by Westchester County Department of Planning.

Soil/ Rock: Part of this area consists of strongly sloping soils and soils which they must be protected in natural condition if classified as wetland.

Supporting Utilities: Electric Power : electric power is available.
Sewer : a 6" inch sewer line exists on Old Lake Street approximately 2,800 feet from the site. The capacity of this line is not adequate for additional flow and gravity flow will not be feasible from this site.
Water : the airport is currently been supplied with one water line, and there is a concern for additional pressure for fire fighting purposes.
Natural Gas: there is no gas available in the vicinity.

Highway/Road Access: This site is approximately 4,000 feet from Exit 2 on I-684 and direct access from Route 120 can be established.

Slopes: Approximately 20% of this site is strongly sloping.

Process Restriction due to size: Wetland will limit available area.

Grade Elevation at Potential Site: High elevation 400 Within Pump Head Capacity.
Low Elevation 370
Differential from Rye Lake elevation 45 Present Condition
(Rye Lake elevation is at 355, with worst condition at 338) 62 Worst Case

Environmental:

Wetlands: Based on New York State Freshwater Wetland Map and Hydrologic map from Westchester County Department of Planning this site is not a designated Federal or State Wetland. It should be noted that the United States Army Corps of Engineers has designated portions of this site, for Westchester County Department of Planning, as wetland on November 1993.

Sediment/ Erosion: Sediment and erosion hazards on this site is slight to moderate.

Drainage: There is a natural watercourse on this site which drains to Rye Lake.

Floodplains: Not within 100 year floodplain.
Flood Hazard

ANALYSIS OF SITE No. 1

Location: Town of Harrison
Airport property on the east side of Route 120

Social:

Zoning: Based on zoning regulations from the Town of Harrison this site is designated as (SB-0) Special Business District. See Table 2 for additional zoning requirements.

Current Use: None - A part of this site has been proposed for related airport uses.

Archeological Significance: None

Proximity to Neighbors: There is no residential unit within 2,500 feet.

Traffic Impact on Neighbors: Minor

Public Acceptability: Minor negative. The construction of a water treatment plant will limit the area available for airport expansion. This may have a positive effect on public acceptability.

Regulatory:

Permitting: Short term minor, involves alteration of land greater than 2.5 acres within 100 feet from a watercourse.

Regulatory Complexity: Feasibility of obtaining County Airport land for this site is unknown at this time.

Economic:

Land Acquisition Cost: Airport property. A value of \$80,000 per acre is used to estimate land acquisition cost.

Construction Cost: Construction cost will be developed for the recommended site. For ranking purposes construction cost has been assumed equal for all potential sites.

Transmission Lines: Distance from existing transmission line to the approximate plant location is 2,200 ft.
Total piping required assuming that existing transmission line will be used is 4300 feet.

Pipeline cost for paved areas @ \$290/ft	4,000 ft	1,160,000
Pipeline cost for unpaved areas @ \$240/ft	300 ft	72,000
Total cost:		\$1,232,000

Additional Pumping from Site to Tank: Cost for additional pumping from site to storage facility has been assumed equal for all potential sites.

Taxes: Unknown

ANALYSIS OF SITE No. 1A:

Location: Town of North Castle
Airport property on the east side of Route 120

Soil Classification:

CrC: Charlton- Chatfield complex, rolling, very rocky, Hydrologic group C
This unit consist of very deep and moderately deep, well drained and somewhat excessively drained Chatfield soils and well drained Charlton soils. It is on the tops and sides of hills that are underlain by highly folded bedrock. Slope ranges from 2 to 15 percent. Exposed bedrock covers 2 to 10 percent of the surface.

Soil Properties:

Water table:	more than 6 feet throughout the year.
Permeability:	moderate to moderately rapid (0.6-6.0 in/hr)
Surface runoff:	medium
Available water capacity:	moderate for Charlton soil - low for Chatfield soil
Flooding hazard:	-
Erosion hazard:	moderate
Depth to bedrock:	Charlton soils - more than 60 inches. Chatfield soils - 20 to 40 inches.
Percent of total site area:	10%

PnB: Paxton fine sandy loam, 2-8% slopes, Hydrologic group C
This soil is gently sloping, very deep and well drained. It is on broad ridges and small hills.

Soil Properties:

Water table:	perched above the dense substratum at a depth of 1.5-2.5 feet (Feb- April)
Permeability:	moderate (06-2.0 in/hr) in the surface layer and subsoil, and very slow in the substratum < 0.2 in/hr
Surface runoff:	medium
Available water capacity:	moderate
Flooding hazard:	none
Erosion:	slight
Depth to bedrock:	more than 60 inches
Percent of total site area:	80%

PnC: Paxton fine sandy loam, 8-15% slopes, Hydrologic group C, Farmland of State Importance.
This soil is strongly sloping, very deep and well drained. It is on the sides and tops of broad ridges and small hills.

Soil Properties:

Water table:	perched above the dense substratum at a depth of 1.5-2.5 feet (Feb- April)
Permeability:	moderate (06-2.0 in/hr) in the surface layer and subsoil, and very slow in the substratum < 0.2 in/hr
Surface runoff:	medium
Available water capacity:	moderate
Flooding hazard:	none
Erosion hazard:	moderate
Depth to bedrock:	more than 60 inches
Percent of total site area:	10%

ANALYSIS OF SITE No. 1A:

Location: Town of North Castle
Airport property on the east side of Route 120

Technical:

Constructibility: Exposed bedrock may hindered constructibility.

Future Expansion: Available area is adequate for at least 25% expansion based on a design capacity of 16 mgd. $0.5 \times (600 \times 180) + (280 \times 600) + 0.5(300 \times 600) + (160 \times 720) + 0.5 \times (720 \times 400) = 571,200 \text{sf}$
165,000 sf are designated as natural ponding area.

Soil/ Rock: 10 percent of soil contains exposed bedrock.

Supporting Utilities: Electric Power : electric power is available.

Sewer : a 6" inch sewer line exists on Old Lake Street approximately 1,200 feet from the site. The capacity of this line is not adequate for additional flow.

Water : the airport is currently been supplied with one water line, and there is a concern for additional pressure for fire fighting purposes.

Natural Gas: there is no gas available in the vicinity.

Highway/Road Access: This site is approximately 2,000 feet from Exit 2 on I-684 and direct access from Route 120 can be established.

Slopes: Less than 15% (Hydrologic Map)

Process Restriction due to size: Available area is adequate for any process design.

Elevation at potential Site: High Elevation 430 Within Pump Head Capacity.
Low Elevation 400
Differential from Lake elevation 75 Present Condition
(Rye Lake elevation is at 355, with worst condition at 338) 92 Worst Case

Environmental:

Wetlands: Based on New York State Freshwater Wetland Map and Hydrologic map from Westchester County Department of Planning this site is not a designated Federal or State Wetland. Two locations have been designated as natural ponding areas by the United States Army Corps of Engineers.

Sediment/ Erosion: Sediment and erosion hazards on this site is moderate.

Drainage: Drainage is directed to Rye Lake.

Floodplains: Not within 100 year floodplain.
Flood Hazard

ANALYSIS OF SITE No. 1A:

Location: Town of North Castle
Airport property on the east side of Route 120

Social:

Zoning: Based on zoning regulations for the Town of North Castle this site is designated as (IND - AA) Industrial AA District. See Table 3 for additional zoning requirements.

Current Use: None - A part of this site has been proposed for related airport uses.

Archeological Significance: It has been suggested in the Westchester County Airport Master Plan that a 1B survey be conducted in the virgin areas of this site. A stage 1B study consists of a subsurface investigations, i.e. shovel and aug testing, to determine the presence or absence of a significant prehistoric and historic cultural resources.

Proximity to Neighbors: There is no residential unit within 2,200 feet.

Traffic Impact on Neighbors: Minor

Public Acceptability: Minor negative. The construction of a water treatment plant will limit the area available for airport expansion. This may have a positive effect on public acceptability. It should be noted that WJWW does not supply water in the Town of North Castle and this may have a negative effect on public acceptance.

Regulatory:

Permitting: Short term minor, involves alteration of land greater than 2.5 acres. A special permit is required.

Regulatory Complexity: Feasibility of obtaining County Airport land for this site is unknown at this time.

Economic:

Land Acquisition Cost: Airport property. A value of \$80,000 per acre is used to estimate land acquisition cost.

Construction Cost: Construction cost will be developed for the recommended site. For ranking purposes construction cost has been assumed equal for all potential sites.

Transmission Lines: Distance from existing transmission line to the approximate plant site is 4,500 feet.
Total piping required assuming that existing transmission line will be used is 8,900 feet.

Pipeline cost for paved areas @ \$290/ft	8000 ft	2,320,000
Pipeline cost for unpaved areas @ \$240/ft	900 ft	216,000
Total cost:		\$2,536,000

Additional Pumping from Site to Tank: Cost for additional pumping from site to storage facility has been assumed equal for all potential sites.

Taxes: Unknown

ANALYSIS OF SITE No. 2:

Location: Town of Harrison
New York City/ Westchester County property
Site Adjacent to Rye Lake

Soil Classification:

ChB: Charlton Loam, 2-8% slopes, Hydrologic group B
This soil is gently sloping, very deep and well drained. It occupies hilltops, and parts of hillsides. It is formed in glacial till derived from granite, schist, and gneiss.

Soil Properties:

Water Table: more than 6 feet throughout the year
Permeability: moderate to moderately rapid (0.6 - 6.0 in/hr)

Available water capacity: moderate
Surface runoff: medium
Flooding hazard: -
Erosion hazard: slight
Depth to bedrock: more than 60 inches
Percent of total site area: 25%

ChC: Charlton Loam, 8-15% slopes, Hydrologic group B
This soil is strongly sloping, very deep and well drained and is on hillsides. It is formed in glacial till derived from granite, schist, and gneiss.

Soil Properties:

Water Table: more than 6 feet throughout the year
Permeability: moderate to moderately rapid (0.6 - 6.0 in/hr)

Available water capacity: moderate
Surface runoff: medium
Flooding hazard: -
Erosion hazard: moderate
Depth to bedrock: more than 60 inches
Percent of total site area: 65%

ChD: Charlton Loam, 15-25% slopes, Hydrologic group B
this soil is moderately steep, very deep and well drained. It is on hillsides. It is formed in glacial till derived from granite, schist, and gneiss.

Soil Properties:

Water Table: more than 6 feet throughout the year
Permeability: moderate to moderately rapid (0.6 - 6.0 in/hr)

Available water capacity: moderate
Surface runoff: rapid
Flooding hazard: -
Erosion hazard: severe
Depth to bedrock: more than 60 inches
Percent of total site area: 10%

ANALYSIS OF SITE No. 2:

Location: Town of Harrison
New York City/ Westchester County property
Site Adjacent to Rye Lake

Technical:

Constructibility:	Site slope may hindered construction.	
Future Expansion:	Available area is not adequate for future expansion.	800X120=72,000 sf >2.2 Acres
Soil/ Rock:	Soil OK	
Supporting Utilities:	Electric Power : electric power is available. Sewer: this site is within the Mamaroneck sewer district. The nearest sewer is on Park Road approximately 3,500 feet from the site. Natural Gas: there is no gas available in the vicinity.	
Highway/Road Access:	This site is approximately 6,000 feet from Exit 2 on I-684 via Route 120 and New Lake Street. New Lake Street is a County road.	
Slopes:	Less than 15% (Hydrologic Map)	
Process Restriction due to size:	Available area is not adequate for all uses and designs.	
Elevation at potential Site:	High Elevation 380 Low Elevation 360 Differential from Lake elevation (Rye Lake elevation is at 355, with worst condition at 338)	Within Pump Head Capacity. 25 Present Condition 42 Worst Case

Environmental:

Wetlands: Based on New York State Freshwater Wetland Map and Hydrologic map from Westchester County Department of Planning this site is not a designated Federal or State Wetland.

Sediment/ Erosion: Sediment and erosion hazards on this site is moderate to severe.

Drainage: Next to watershed and within 300 feet from the reservoir.

Floodplains: Not within 100 year floodplain.

Flood Hazard

ANALYSIS OF SITE No. 2:

Location: Town of Harrison
New York City/ Westchester County property
Site Adjacent to Rye Lake

Social:

Zoning: Based on zoning regulations from the Town of Harrison this site is designated as (R-1) Residential 1 acre per lot.. See Table 2 for additional zoning requirements.

Current Use: None - competes with other uses. A pond was envision for part of this site. Hazen and Sawyer 1992

Archeological Significance: None

Proximity to Neighbors: Yes - the nearest residential unit is within 500 feet.

Traffic Impact on Neighbors: This site has a direct access from a County Road (New Lake Street) but is also a route to a residential area. The use of New Lake Street will have a minor negative traffic impact.

Public Acceptability: The proximity to the reservoir and residential area will have a negative public acceptance.

Regulatory:

Permitting: This site is within an area of Residential Zoning.

Regulatory Complexity: This site is within 300 feet from the reservoir.

Economic:

Land Acquisition Cost: New York City property. A value of \$80,000 per acre is used to estimate land acquisition cost .

Construction Cost: Construction cost will be developed for the recommended site. For ranking purposes construction cost has been assumed equal for all potential sites.

Transmission Lines: Distance from existing transmission line to the approximate plant location is 900 ft.
Total piping required assuming that existing transmission line will be used is 1,800 ft.

Pipeline cost for paved areas @ \$290/ft	1000 ft	290,000
Pipeline cost for unpaved areas @ \$240/ft	800 ft	192,000
Total cost:		\$482,000

Additional Pumping from Site to Tank: Cost for additional pumping from site to storage facility has been assumed equal for all potential sites.

Taxes: Unknown

ANALYSIS OF SITE No. 3

Location: Town of Harrison
Airport property along Purchase Street

Soil Classification:

LcA:	Leicester Loam, 0-3% slopes, stony, Hydrologic group C	
	This soil is nearly level, very deep, and somewhat poorly drained and poorly drained. It is in the uplands and along small drainage ways in bedrock controlled areas. Stones greater than 10 inches in diameter occupy 0.01 to 0.1 percent of the surface and are about 25 to 75 feet apart.	
	Soil Properties:	
	Water Table:	0 -1.5 feet below surface (Nov-May)
	Permeability:	moderate to moderately rapid (0.6-6.0 in/hr) in the surface and subsoil , and moderate to rapid (0.6-2.0 in/hr) in the substratum.
	Available water capacity:	moderate
	Surface runoff:	Slow
	Flooding hazard:	-
	Erosion hazard:	Slight
	Depth to bedrock:	more than 60 inches
	Percent of total site area:	20%
PnB:	Paxton fine sandy loam, 2-8% slopes, Hydrologic group C	
	This soil is gently sloping, very deep and well drained. It is on broad ridges and small hills.	
	Soil Properties:	
	Water table:	perched above the dense substratum at a depth of 1.5-2.5 feet
	Permeability:	(Feb - Apr) moderate (0.6-2.0 in/hr) in the surface layer and subsoil, and very slow in the substratum < 0.2 in/hr.
	Surface runoff:	medium
	Available water capacity:	moderate
	Flooding hazard:	none
	Erosion:	slight
	Depth to bedrock:	more than 60 inches
	Percent of total site area:	10%
WdB:	Woodbridge loam, 3-8% Slopes, Hydrologic group C	
	This soil is gently sloping, very deep and moderately well drained. It is in the lower parts of hillsides in the uplands.	
	Soil Properties:	
	Water Table:	1.5 -2.5 feet below surface (Nov-May)
	Permeability:	moderate (0.6-2.0 in/hr) in the surface and subsoil , and slow or very slow (0.02 in/hr) in the substratum.
	Available water capacity:	moderate
	Surface runoff:	medium
	Flooding hazard:	-
	Erosion hazard:	moderate
	Depth to bedrock:	more than 60 inches
	Percent of total site area:	30%

ANALYSIS OF SITE No. 3

Location: Town of Harrison
Airport property along Purchase Street

Sh:	Sun Loam, hydrologic group D, if wetland, protect in natural condition. This nearly level soil is very deep and poorly drained to very poorly drained. It is in small depressions and along drainage ways on till plains.	
	Soil Properties:	
	Water Table:	1.0 foot above to 0.5 feet below the surface (Nov-Apr)
	Permeability:	moderate (0.6-2.0 in/hr) in the surface layer and slow or very slow (< 0.2 in/hr) in the subsoil and substratum.
	Available water capacity:	-
	Surface runoff:	very slow
	Flooding hazard:	none
	Erosion hazard:	none to slight
	Depth to bedrock:	more than 60 inches
	Percent of total site area:	5%
Ub:	Udorthents, smoothed This unit consists of very deep, excessively drained to moderately well drained soil areas that have been altered by cutting and filling. It consists of soil material in alternate layers, ranging from sand to silt loam. Slopes are mainly 3 to 15 percent, but range from 0 to 25 percent, with the steeper slopes on the sides of the unit. The fill material is often greater than 20 inches thick over the original soil. Rock fragment content ranges from 0 to 60 percent. The properties and characteristics of this unit are so variable that an on-site investigation and evaluation is required to determine the suitability and limitations for proposed uses.	
	Percent of total site area:	35%

ANALYSIS OF SITE No. 3

Location: Town of Harrison
Airport property along Purchase Street

Technical:

Constructibility: 35% of this site is fill from borrow for airport construction purposes. Site slope and soil is suitable for construction.

Future Expansion: Available area is adequate for all uses and designs and future expansion. Approximately one acre on this site will be preserved as ponding - drainage area.

$0.5 \times (720 \times 350) + (250 \times 240) + (250 \times 720) +$
 $+(250 \times 630) + (260 \times 100) = 549,500 \text{ sf}$
12.6 Acres
42,000 sf is designated as ponding area.

Soil/ Rock: Soil permits construction. It should be noted that 35% of this site has been fill with borrow material for airport related construction services.

Supporting Utilities: Electric Power : electric power is available.

Sewer: an 8" line exists near Hangar "E" approximately 1,000 feet from the site.

The capacity of this sewer is adequate for sanitary disposal purposes.

Water : the airport is currently been supplied with one water line, and there is a concern for additional pressure for fire fighting purposes.

Natural Gas: there is no gas available in the vicinity, the nearest gas line is approximately 9,000 feet from the site.

Highway/Road Access: This site is approximately 6,000 feet from Exit 2 on I-684 via Route 120 (Purchase Street). Route 120 (Purchase Street) is a State road.

Slopes: Less than 15% (Hydrologic Map)

Process Restriction due to size: Available area is adequate for any uses and designs.

Elevation at potential Site:	High Elevation 430	Within Pump Head Capacity.
	Low Elevation 400	
	Differential from Lake elevation	75 Present Condition
	(Rye Lake elevation is at 355, with worst condition at 338)	92 Worst Case

Environmental:

Wetlands: Based on New York State Freshwater Wetland Map and Hydrologic map from Westchester County Department of Planning this site is not a designated Federal or State Wetland. A portion of this site is designated as natural ponding area and a drainage channel originates at the south part of site and directs runoff to Rye Lake.

Sediment / Erosion: Sediment and erosion hazards on this site is moderate.

Drainage: Drainage is currently directed to Rye Lake. Modifications may be made by the Airport to divert part of the runoff away from Rye Lake.

Floodplains: Not within 100 year floodplain.
Flood Hazard

ANALYSIS OF SITE No. 3

Location: Town of Harrison
Airport property along Purchase Street

Social:

Zoning: Based on zoning regulations from the Town of Harrison this site is designated as (SB-0) Special Business District. See Table 2 for additional zoning requirements.

Current Use: None - this site has been proposed for related airport uses.

Archeological Significance: None

Proximity to Neighbors: Yes - across Purchase Street.

Traffic Impact on Neighbors: This site has a direct access from a State Road, (Purchase Street) but is also a route to a residential area. The use of Purchase Street will have a minor negative traffic impact.

Public Acceptability: Proximity to residential units may hindered public acceptibility.
Construction of a water treatment plant on airport property will limit the area available for airport expansion. This may have a positive effect on public acceptibility.

Regulatory:

Permitting: Short term minor, involves alteration of land greater than 2.5 acres, with drainage discharge to watershed

Regulatory Complexity: Feasibility of obtaining County Airport land for this site is unknown at this time.

Economic:

Land Acquisition Cost: Airport property. A value of \$80,000 per acre is used to estimate land acquisition cost .

Construction Cost: Construction cost will be developed for the recommended site. For ranking purposes construction cost has been assumed equal for all potential sites.

Transmission Lines: Distance from existing transmission line to the approximate plant location is 50 ft.
Total piping required assuming that existing transmission line will be used is 400 ft.

Pipeline cost for paved areas @ \$290/ft	100 ft	29,000
Pipeline cost for unpaved areas @ \$240/ft	300 ft	72,000
Total cost:		\$101,000

Additional Pumping from Site to Tank: Cost for additional pumping from site to storage facility has been assumed equal for all potential sites.

Taxes: Unknown

ANALYSIS OF SITE No. 4:

Location: Town of Harrison
Private Property Along West Side of Purchase Street
Residential Area R2.5

Soil Classification:

PnB: Paxton fine sandy loam, 2-8% slopes, Hydrologic group C
This soil is gently sloping, very deep and well drained. It is on broad ridges and small hills.

Soil Properties:

Water table:	perched above the dense substratum at a depth of 1.5-2.5 feet (Feb to Apr)
Permeability:	moderate (06-2.0 in/hr) in the surface layer and subsoil, and very slow in the substratum < 0.2 in/hr
Surface runoff:	medium
Available water capacity:	moderate
Flooding hazard:	none
Erosion:	slight
Depth to bedrock:	more than 60 inches
Percent of total site area:	100%

ANALYSIS OF SITE No. 4:

Location: Town of Harrison
Private Property Along West Side of Purchase Street
Residential Area R2.5

Technical:

Constructibility: Site slope and soil permit construction on this site.

Future Expansion: Available area is not adequate for future expansion.

Tax Lot 52 is 6.1 acres

Soil/ Rock: Soil OK

Supporting Utilities: Electric Power : electric power is available.

Sewer: this site is within the Mamaroneck sewer district. The nearest sewer is at Manhattanville College, approximately 9,000 feet from the site.

Water: water is available.

Natural Gas: nearest gas line is on Anderson Hill Road, approximately 9,000 feet from the site.

Highway/Road Access: This site is approximately 6,000 feet from Exit 2 I-684 via Route 120 (Purchase Street).
Route 120 (Purchase Street) is a State road.

Slopes: Less than 15% (Hydrologic Map)

Process Restriction due to size: Available area is adequate for any uses and designs.

Elevation at potential Site: High Elevation 400 Within Pump Head Capacity.
Low Elevation 370
Differential from Lake elevation 45 Present Condition
(Rye Lake elevation is at 355, with worst condition at 338) 92 Worst Case

Environmental:

Wetlands: Based on New York State Freshwater Wetland Map and Hydrologic map from Westchester County Department of Planning this site is not a designated Federal or State Wetland.

Sediment/ Erosion: Sediment and erosion hazards on this site is slight.

Drainage: Drains away from Rye Lake.

Floodplains: Not within 100 year floodplain.
Flood Hazard

ANALYSIS OF SITE No. 4:

Location: Town of Harrison
Private Property Along West Side of Purchase Street
Residential Area R2.5

Social:

Zoning: Based on zoning regulations from the Town of Harrison this site is designated as (R-2.5) Residential 2.5 acres per lot. See Table 2 for additional zoning requirements.

Current Use: None - competes with private sector. Tax Lot 52 currently is not on the market for sale.

Archeological Significance: None

Proximity to Neighbors: This site is adjacent to residential units.

Traffic Impact on Neighbors: This site has a direct access from a State Road (Purchase Street) but is also a route to a residential area. The use of Purchase Street will have a minor negative traffic impact.

Public Acceptability: The proximity to residential units will have a negative impact on public acceptability.

Regulatory:

Permitting: This site is within a Residential Zone.

Regulatory Complexity:

Economic:

Land Acquisition Cost: Ranges between \$180,000-225,000 per acre.

Lot 52 (225,000X6.1)= \$1,372,500

Construction Cost: Construction cost will be developed for the recommended site. For ranking purposes construction cost has been assumed equal for all potential sites.

Transmission Lines: Distance from existing transmission line to the approximate plant location is 50 ft
Total piping required, assuming that existing transmission line will be used is 400 ft

Pipeline cost for paved areas @ \$290/ft	50 ft	14,500
Pipeline cost for unpaved areas @ \$240/ft	350 ft	84,000
Total cost:		\$98,500

Additional Pumping from Site to Tank Cost for additional pumping from site to storage facility has been assumed equal for all potential sites.

Taxes: \$5,000

ANALYSIS OF SITE No. 5:

Location: Town of Harrison
Private Property Along East Side of Purchase Street
Residential Area R2.5 (North of Water Storage Tank)

Soil Classification:

PnB:	Paxton fine sandy loam, 2-8% slopes, Hydrologic group C This soil is gently sloping, very deep and well drained. It is on broad ridges and small hills.
Soil Properties:	Water table: perched above the dense substratum at a depth of 1.5-2.5 feet Permeability: (Feb-April) moderate (0.6-2.0 in/hr) in the surface layer and subsoil, and very slow in the substratum < 0.2 in/hr Surface runoff: medium Available water capacity: moderate Flooding hazard: none Erosion: slight Depth to bedrock: more than 60 inches Percent of total site area: 50%
PnC:	Paxton fine sandy loam, 8-15% slopes, Hydrologic group C, Farmland of State Importance. This soil is strongly sloping, very deep and well drained. It is on the sides and tops of broad ridges and small hills.
Soil Properties:	Water table: perched above the dense substratum at a depth of 1.5-2.5 feet Permeability: (Feb to April) moderate (0.6-2.0 in/hr) in the surface layer and subsoil, and very slow in the substratum < 0.2 in/hr Surface runoff: medium Available water capacity: moderate Flooding hazard: none Erosion hazard: moderate Depth to bedrock: more than 60 inches Percent of total site area: 5%
WdB:	Woodbridge loam, 3-8% Slopes, Hydrologic group C This soil is gently sloping, very deep and moderately well drained. It is in the lower parts of hillsides in the uplands.
Soil Properties:	Water Table: 1.5 -2.5 feet below surface (Nov-May) Permeability: moderate (0.6-2.0 in/hr) in the surface and subsoil , and slow or very slow (0.02 in/hr) in the substratum. Available water capacity: moderate Surface runoff: medium Flooding hazard: - Erosion hazard: moderate Depth to bedrock: more than 60 inches Percent of total site area: 40%
RdA:	Ridgebury Loam 0-3% slopes, Hydrologic group C This soil is nearly level, very deep and poorly and somewhat poorly drained. It is in the uplands and along small drainageways.
Soil Properties:	Water Table: 0 - 2.5 feet below surface (Nov-May) Permeability: moderate (0.6-2.0 in/hr) in the surface and subsoil , and slow or very slow (0.02 in/hr) in the substratum. Available water capacity: moderate Surface runoff: slow Flooding hazard: none Erosion hazard: slight Depth to bedrock: more than 60 inches Percent of total site area: 5%
Note:	Sh, LcA , PoB and RgB soils are also present on this lot but are outside the area needed for construction.

ANALYSIS OF SITE No. 5:

Location: Town of Harrison
Private Property Along East Side of Purchase Street
Residential Area R2.5 (North of Water Storage Tank)

Technical:

Constructibility: Site slope and soil characteristics are suitable for construction.

Future Expansion: Available area is adequate for future expansion.

Tax lot 2 39.19 acres

Soil/ Rock: Soil characteristics are suitable for construction.

Supporting Utilities: Electric Power : electric power is available.
Sewer: the proposed development adjacent to the site will have sewers. The location of the sewer will be approximately 1,100 feet from the proposed site.
Water: water is available
Natural Gas: nearest gas line is on Anderson Hill Road, approximately 8,000, feet from the site.

Highway/Road Access: This site is approximately 7,000 feet from Exit 2 on I-684 via Route 120 (Purchase Street).
Route 120 (Purchase Street) is a State road.

Slopes: Less than 15% (Hydrologic Map)

Process Restriction due to size: Available area is adequate for any uses and designs.

Elevation at potential Site: High Elevation 450 Within Pump Head Capacity.
Low Elevation 430
Differential from Lake elevation 95 Present Condition
(Rye Lake elevation is at 355, with worst condition at 338) 112 Worst Case

Environmental:

Wetlands: Based on New York State Freshwater Wetland Map and Hydrologic map from Westchester County Department of Planning this site is not a designated Federal or State Wetland. An area outside of the the construction area of the site is designated as natural ponding area.

Sediment/ Erosion: Sediment and erosion hazards on this site is slight to moderate.

Drainage: Drains away from Rye Lake.

Floodplains: Not within 100 year floodplain.
Flood Hazard

ANALYSIS OF SITE No. 5:

Location: Town of Harrison
Private Property Along East Side of Purchase Street
Residential Area R2.5 (North of Water Storage Tank)

Social:

Zoning: Based on zoning regulations from the Town of Harrison this site is designated as (R-2.5) Residential 2.5 acres per lot. See Table 2 for additional zoning requirements.

Current Use: None - competes with private sector. Tax lot No. 2 is currently on the market for sale. Application with Town Planning Department for subdivision is inactive.

Archeological Significance: None

Proximity to Neighbors: This site is adjacent to residential units.

Traffic Impact on Neighbors: This site has a direct access from a State Road (Purchase Street) but is also a route to a residential area. The use of Purchase Street will have a minor negative traffic impact.

Public Acceptability: The proximity to residential units will have a negative impact on public acceptability.

Regulatory:

Permitting: This site is within a Residential Zone.

Regulatory Complexity:

Economic:

Land Acquisition Cost: Land acquisition cost is \$2,500,000 for entire tax lot 2. Owner is not offering to sell only a portion of the total lot (40 acres).

Construction Cost: Construction cost will be developed for the recommended site. For ranking purposes construction cost has been assumed equal for all potential sites.

Transmission Lines:	Distance from existing transmission line to the approximate plant location is 150 ft.		
	Total piping required, assuming that existing transmission line will be used is 700 ft.		
	Pipeline cost for paved areas @ \$290/ft	0 ft	0
	Pipeline cost for unpaved areas @ \$240/ft	700 ft	168,000
	Total cost:		\$168,000

Additional Pumping from Site to Tank: Cost for additional pumping from site to storage facility has been assumed equal for all potential sites.

Taxes: \$32,000

ANALYSIS OF SITE No. 6:

Location: Town of Harrison
Private Property Along East Side of Purchase Street
Residential Area R2.5 (East of Water Storage Tank)

Soil Classification:

PnB:	Paxton fine sandy loam, 2-8% slopes, Hydrologic group C This soil is gently sloping, very deep and well drained. It is on broad ridges and small hills.	
Soil Properties:	Water table:	perched above the dense substratum at a depth of 1.5-2.5 feet
	Permeability:	(Feb-April) moderate (06-2.0 in/hr) in the surface layer and subsoil, and very slow in the substratum < 0.2 in/hr
	Surface runoff:	medium
	Available water capacity:	moderate
	Flooding hazard:	none
	Erosion:	slight
	Depth to bedrock:	more than 60 inches
	Percent of total site area:	45%
PnC:	Paxton fine sandy loam, 8-15% slopes, Hydrologic group C, Farmland of State Importance. This soil is strongly sloping, very deep and well drained. It is on the sides and tops of broad ridges and small hills.	
Soil Properties:	Water table:	perched above the dense substratum at a depth of 1.5-2.5 feet
	Permeability:	(Feb to April) moderate (06-2.0 in/hr) in the surface layer and subsoil, and very slow in the substratum < 0.2 in/hr
	Surface runoff:	medium
	Available water capacity:	moderate
	Flooding hazard:	none
	Erosion hazard:	moderate
	Depth to bedrock:	more than 60 inches
	Percent of total site area:	5%
WdB:	Woodbridge loam, 3-8% Slopes, Hydrologic group C This soil is gently sloping, very deep and moderately well drained. It is in the lower parts of hillsides in the uplands.	
Soil Properties:	Water Table:	1.5 -2.5 feet below surface (Nov-May)
	Permeability:	moderate (0.6-2.0 in/hr) in the surface and subsoil , and slow or very slow (0.02 in/hr) in the substratum.
	Available water capacity:	moderate
	Surface runoff:	medium
	Flooding hazard:	-
	Erosion hazard:	moderate
	Depth to bedrock:	more than 60 inches
	Percent of total site area:	45%
RdA:	Ridgebury Loam 0-3% slopes, Hydrologic group C This soil is nearly level, very deep and poorly and somewhat poorly drained. It is in the uplands and along small drainageways.	
Soil Properties:	Water Table:	0 - 2.5 feet below surface (Nov-May)
	Permeability:	moderate (0.6-2.0 in/hr) in the surface and subsoil , and slow or very slow (0.02 in/hr) in the substratum.
	Available water capacity:	moderate
	Surface runoff:	slow
	Flooding hazard:	none
	Erosion hazard:	slight
	Depth to bedrock:	more than 60 inches
	Percent of total site area:	5%

ANALYSIS OF SITE No. 6:

Location: Town of Harrison
Private Property Along East Side of Purchase Street
Residential Area R2.5 (East of Water Storage Tank)

Technical:

Constructibility: Site slope and soil characteristics are suitable for construction.

Future Expansion: Available area is adequate for future expansion.

Tax lot 3 is 75.364 acres

Soil/ Rock: Soil characteristics are suitable for construction.

Supporting Utilities: Electric Power : electric power is available.
Sewer: the proposed development adjacent to the site will have sewers. The location of the sewer will be approximately 1,000 feet from the proposed site.
Water: water is available
Natural Gas: nearest gas line is on Anderson Hill Road, approximately 8,000 feet from the site.

Highway/Road Access: This site is approximately 7,000 feet from Exit 2 on I-684 via Route 120 (Purchase Street).
Route 120 (Purchase Street) is a State road

Slopes: Less than 15% (Hydrologic Map)

Process Restriction due to size: Available area is adequate for any uses and designs.

Elevation at potential Site: High Elevation 450 Within Pump Head Capacity.
Low Elevation 430
Differential from Lake elevation 95 Present Condition
(Rye Lake elevation is at 355, with worst condition at 338) 112 Worst Case

Environmental:

Wetlands: Based on New York State Freshwater Wetland Map and Hydrologic map from Westchester County Department of Planning this site is not a designated Federal or State Wetland. A portion of this area, west of water storage facility has a high groundwater table and soil classification requires that is preserved in natural condition.

Sediment/ Erosion: Sediment and erosion hazards on this site is slight to moderate.

Drainage: Drains away from Rye Lake.

Floodplains: Not within 100 year floodplain.
Flood Hazard

ANALYSIS OF SITE No. 6:

Location: Town of Harrison
Private Property Along East Side of Purchase Street
Residential Area R2.5 (East of Water Storage Tank)

Social:

Zoning: Based on zoning regulations from the Town of Harrison this site is designated as (R-2.5) Residential 2.5 acres per lot. See Table 2 for additional zoning requirements.

Current Use: None - competes with private sector. Tax lot No. 3 is not listed for sale and is envision for a major development which includes a golf course and 700 residential units.

Archeological Significance: None

Proximity to Neighbors: This site is adjacent to residential units.

Traffic Impact on Neighbors: This site has a direct access from a State Road (Purchase Street) but is also a route to a residential area. The use of Purchase Street will have a minor negative traffic impact.

Public Acceptability: The proximity to residential units will have a negative impact on public acceptability.

Regulatory:

Permitting: This site is within a Residential Zone.

Regulatory Complexity:

Economic:

Land Acquisition Cost: It is not available. Projecting from Tax lot 2 real estate value will be in excess of \$500,000

Construction Cost: Construction cost will be developed for the recommended site. For ranking purposes construction cost has been assume equal for all potential sites.

Transmission Lines: Distance from existing transmission line to the approximate plant location is 50 ft.
Total piping required assuming that existing transmission line will be used is 400 ft.

Pipeline cost for paved areas @ \$290/ft	0 ft	0
Pipeline cost for unpaved areas @ \$240/ft	400 ft	96,000
Total cost:		\$96,000

Additional Pumping from Site to Tank: Cost for additional pumping from site to storage facility has been assumed equal for all potential sites.

Taxes: Unknown