Feasibility Study for the Future of Rosemary Pool

APPENDIX C

Rosemary Lake Complex Facilities Plan

Needham, Massachusetts

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1. Executive Summary

This study represents a need for various uses in the Town of Needham to fulfill modernized, expanded, or new programs at a new complex located adjacent to Rosemary Lake. These include relocating several Town departments from Town Hall (see the program in this report for a full list), constructing a new Senior Center and the creation of a new Community Center for meeting, presentation, dining and classroom spaces. Also, a major proposed feature of the complex will be a gymnasium and natatorium that would present many fitness opportunities for Town residents. In order to support these uses a 290-space parking garage is proposed to be built under the Senior Center and Community Center.

Although the difficulties of the steeply sloping site cannot be underestimated, it was nonetheless determined, through careful geotechnical, environmental and architectural analysis that such a large building could, indeed, be constructed. Dense to very dense soil and glacial till were encountered in three borings and indicate that this material is suitable for supporting the proposed design. Complicating site difficulties are three wetlands (including the lake) that would be subject to the jurisdiction of the MA WPA and the Town of Needham Wetlands Protection Regulations.

The proposed project is estimated to represent an increase of 109 vehicles per hour (25 percent) on Rosemary Street east of the site and an increase of 75 vehicles per hour (17 percent) to the west of the site. These Traffic impacts associated with the proposed project are expected to be minimal.

An initial informal review of the current zoning appears to allow this type of municipal structure in the Single Residence B zone under the category of "parks, playgrounds and municipal structures including water towers". A formal review should be undertaken in the initial stages of the design phase for a final determination. The maximum buildable area (i.e. that which is allowed by zoning setbacks) is 117,200 sf.

The design represents an arrangement of the program elements in such a manner that most efficiently meets the needs of the users. The initial task of the design team was to create a two-phase structure consisting of the (Phase 1) Community Center, Senior Center and Parking Garage. The second phase (a Gymnasium and Natatorium) was designed such that these elements could also be constructed separately from each other, if the demands of funding require it. Two design schemes are presented, however, the Support Committee determined that Scheme A was superior to Scheme B in the relationship of the new Natatorium to the existing Rosemary Pool.

The Financial Projection Summary sheet, shows a deficit of $49,760 in year 1. This is due to the anticipated slow start up of the Adult Day Care facility. In year 2 the facility will operate closer to full capacity, which will push the budget to a surplus status at $54,861. Through various revenue generating means (such as Adult Day Care and multipurpose room rentals) as shown on the next few pages, it is possible for Phase I of the Community/Senior center Needham to sustain itself, covering both annual operating expenses and salaries. However, please note that the success weighs heavily upon the profitability of the Adult Day Care. If those services are not marketed sufficiently and attendance is low, the budget will suffer.

Phase IIA and IIB are scheduled to be in place by year 5. At that point in time the pool, gym, walking track, and fitness components will be functioning branches of the main facility. Although the expenses and salaries involved in running the second phase of this project will be extensive, they can be offset with annual fitness membership revenues. With a non-resident family membership fee set at $495 and a discounted resident family membership set at $395 (to offset the individual tax rate impact), the facility would remain affordable (and price completive with area fitness centers) while covering the necessary operating costs. Also, depending on the demand for fitness classes, the Town could bring in additional revenues through creative programming and space rentals within the new structures. Although the facility would be more profitable in year 1 if all phases of the project were constructed for the grand opening, it is possible for the two phases to be self-sufficient by year 2 with separate construction schedules.

An estimate of construction costs is included in this report and is broken down by material specification, phase and several additional options. It should be noted that both schemes are similar in cost and that a theoretical "flat" site was also estimated. Clearly, there is a premium to be paid for building such a structure on this site, however, the charms of Rosemary Lake, convenience of this location and other available parcels must be considered when determining the final location.

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2. Site Analysis

Existing Conditions

The 9.3-acre ± pool complex (Assessors Parcel 1 and 3 on Plan 225) is located on Rosemary Street in Needham, Massachusetts. The Property is bounded by Rosemary Street to the north and west, Massachusetts Bay Transportation Authority Commuter Rail (Needham Line) to the east and Rosemary Lake to the south. The site topography slopes from a high elevation of 266 (North America Vertical Datum), at its northeast corner, to a low elevation of 204 at the Rosemary Lake bank. The only structures currently on the parcel are a 3,500 S.F. concrete block pool house, a 100 S.F. concrete block storage shed, and a 19,000 S.F. fresh water pool. Also, there is a number of gravel parking areas at different elevations connected by a bituminous concrete driveway.

Needham Survey Associates has completed a Topographic survey for the project.

Environmental Assessment

A Phase 1 Environmental Site Assessment is included in the Appendix. This assessment included a review of the Site history, a Site reconnaissance visit, and a review of local and regulatory files pertaining to the Site and surrounding area. The assessment revealed no evidence of recognized environmental conditions in connection with the property except for the following:

- Permits on file with the Needham Fire Department for the Site indicated the installation of USTs at the Site. We recommend that a geophysical survey be considered to evaluate the Site for evidence and location of one or more abandoned UST(s).
- A review of state, and local databases identified abutting properties located in the expected upgradient direction from the Site which have documented releases of oil and hazardous materials. We recommend that these files be reviewed at the DEP to determine if the releases have potentially impacted at the Site. If the results of this review indicate a potential impact on the Site's subsurface conditions, we may then recommend a subsurface investigation at the Site.

Zoning

As indicated earlier, the property is currently zoned Single Residence B (SRB), which would permit the construction of a municipal structure. The site does not fall within the Aquifer Protection District. The following is a summary of the dimensional requirements within the Single Residence B District.

District	Minimum Lot Area (sq. feet)	Minimum Frontage (feet)	Front Setback (feet)	Side Setback (feet)	Rear Setback (feet)	Maximum Floor Area Ratio (F.A.R)	Maximum % Lot Coverage	Maximum Stories	Maximum Height (feet)
Single Residence B	10,000	80	20 (a)	12.5 (b)	10 (c)	NR (d)	NR (e)	2-1/2	35

a.) Buildings or structures devoted to a public, semi-public or institutional use shall have a minimum front yard setback of 25 feet.
b.) Buildings or structures devoted to a public, semi-public or institutional use shall have a minimum side yard setback of 25 feet.
c.) Buildings or structures devoted to a public, semi-public or institutional use shall have a minimum rear yard setback of 25 feet.
d.) Buildings or structures devoted to a public, semi-public or institutional use shall have a maximum floor area ration of 0.30.
e.) Buildings or structures devoted to a public, semi-public or institutional use shall not cover more than fifteen (15) percent of the lot area.

Drainage

Impervious surfaces on the site include access drives and existing buildings. There is no visible existing drainage system on the property. Stormwater runoff flows overland directly into Rosemary Lake. The proposed drainage system will be required to collect and treat stormwater runoff on site. This will be accomplished by the installation of stormwater treatment structures (Vortechnics© or Downstream Defender©) and the construction of on-site detention basins (either above- or below-grade). A preliminary Pre-Post stormwater run-off evaluation indicates the site will require to detain approximately 23,000 cubic feet of stromwater water in a 100-year storm event.

Utilities

Limited information is available on the existing utility services to the property (see Needham Survey Topographic Survey). Electric, telephone and cable are currently provided to the area via overhead wires on the northern side of Rosemary Street. It is assumed that sufficient capacity exists in these systems to support the proposed building.

According to the building program dated November 1, 2001, the breakdown of the building uses (i.e. office, senior center, gymnasium, pool, locker rooms) will result in a wastewater flow of approximately 6,000 – 9,000 gallons per day. This is based on Title 5 – the State Environmental Code (310 CMR 15.000). Further review of the wastewater generated from the project will be necessary.

Based on our discussions with the Needham water and sewer there appears to be sufficient capacity in the existing 12-inch water and 10-inch sewer located in Rosemary Street.

Natural Resources

On November 20, 2001 Rizzo Associates personnel visited the site. The purpose of the visit was to assess the location of the proposed pool complex with respect to wetland resource areas

There are three (3) wetland resource areas associated with the Site that are protected by the Massachusetts Wetlands Protection Act (MA WPA) and the Town of Needham Wetlands Protection Regulations. The resource areas are Bank (310 CMR 10.54), Bordering Vegetated Wetland (BVW) (310 CMR 10.55), and Land Under Water Bodies (310 CMR 10.56). The land within 100 feet of Bank and BVW is also subject to the jurisdiction of the MA WPA and the Town of Needham Wetlands Protection Regulations as a buffer zone to those resource areas.

Bank and Land Under Waterbodies. These resource areas are associated with Rosemary Lake, which is adjacent to the Site. The proposed pool complex will have no direct impact on Bank or Land Under Waterbodies.

Bordering Vegetated Wetland. Southwest of the Site there is a small area of Bordering Vegetated Wetland (BVW) that is also associated with Rosemary Lake. This wetland is an emergent wetland dominated by sedges (*Carex* sp.) and rushes (*Scirpus* sp.). The northeastern portion of the Site consists of a rather steep slope vegetated with common reed (*Phragmites australis*) and sumac (*Rhus* sp.). This area is considered upland as no evidence of hydric (wetland) soil or wetland hydrology was observed. The proposed project will have no direct impact on BVW.

Bordering Land Subject to Flooding. The Flood Insurance Rate Map for the Town of Needham, Massachusetts (Flood Hazard Boundary Map H-04/Flood Insurance Rate Map I-04) indicates that the proposed project is located within Zone C, an area of minimal flood hazard. The proposed project will therefore have no impact on Bordering Land Subject to Flooding.

Required Permits. The land within 100 feet of Bank and BVW is subject to the jurisdiction of the MA WPA and the Town of Needham Wetlands Protection Regulations. Work within 100 feet of Bank and BVW requires the filing of a Notice of Intent (NOI) or Request for Determination of Applicability with the Town of Needham Conservation Commission. In addition, the Town of Needham Wetlands Protection Regulations state that no construction is allowed within 25 feet of the limit of Bank or BVW. Construction is defined to include all roadways, driveways, buildings, decks, clearing and grading, stormwater detention basins, and point-source discharges. The project, as shown on the Site Plan (L101, dated October 29, 2001), does not appear to require such work within 25 feet of Bank or BVW.

Traffic

Rizzo completed traffic volume counts on Rosemary Street from Saturday, November 17th to Tuesday, November 20th. Weekday traffic volumes on Rosemary Street today are 4,770 vehicles per day and approximately 400 vehicles per hour during weekday commuter peak hours. The existing site driveway at Rosemary Street currently operates at Level of Service B or better during weekday morning and afternoon peak hours and Level of Service A during the Saturday midday peak hour. These volumes do not include the actual volumes during the summer months when the Rosemary Pool is open. The number of trips generated during the summer months was assumed for the current condition and a seasonal factor of 8% included. All traffic volumes discussed assume that as the base condition.

During the afternoon peak hour, traffic from the proposed project is anticipated to generate up to 140 trips without the expansion of the recreation complex and approximately 190 trips with the expansion of the recreation complex. Without the expansion of the recreation complex, this represents an increase of 81 vehicles per hour (18 percent) on Rosemary east of the site and an increase of 55 vehicles per hour (12.5 percent) to the west of the site. With the expansion of the recreation complex, this represents an increase of 109 vehicles per hour (25 percent) on Rosemary Street east of the site and an increase of 75 vehicles per hour (17 percent) to the west of the site. These Traffic impacts associated with the proposed project are expected to be minimal. Proposed improvements will include provision of a stop sign on the site driveway approach to Rosemary Street and maintenance of the vegetation along Rosemary Street east of the site driveway to continue to provide adequate sight distance at this location.

3. Program

EXISTING

PROGRAM	QTY	AREA	TOTAL	SF
0.00 Exisitng Pool and Bath House				

PHASE 1

PROGRAM	QTY	AREA	TOTAL	SF
1.01 Lobby/Reception			**925**	**sf**
a Lobby/Reception/Waiting/Telephone	1	685	685	
b Vestibule	1	75	75	
c Coatroom	1	40	40	
d Display/Message Center/Gallery	1	125	125	
1.02 Senior Offices			**3,550**	**sf**
a Reception / General Admin	1	685	685	
b Council on Aging	5	100	500	
c Friends of Needham Elderly	1	200	200	
d Counseling Rooms	3	125	375	
e Meeting Room (small)	2	225	450	
f Meeting Room (large)	2	260	520	
g Special Programs	1	820	820	
1.03 Senior Day Care			**1,635**	**sf**
a Day Care room	1	1,540	1,540	
b Kitchenette	1	50	50	
c Toilet	1	45	45	
1.04 Health Counseling			**790**	**sf**
a Keep Well Clinic	1	305	305	
b Conference/Counseling room	1	100	100	
c Exam rooms	2	80	160	
d Changing rooms	2	50	100	
e Fitness/therapy asst	1	100	100	
f Storage	1	25	25	
1.11 Lounge	1	910	**910**	**sf**
1.12 Multi-Purpose			**4,940**	**sf**
a Multi-Purpose Room	1	3,450	3,450	
b Stage	1	940	1,000	
c Table And Chair Storage	2	190	380	

d Piano	1	50	50	
e Folding Partitions (included)	1	0	60	
1.13 Dining			**2,975**	**sf**
a Dining Room	1	2,000	2,000	
b Kitchen	1	975	975	
c Storage (shared in Multi-Purpose)	1	0	0	
1.14 Crafts			**1,290**	**sf**
a Craft Room (with folding partition)	2	645	1,290	
b Storage (included)	1	0	0	
1.15 Game Room	**1**	**2,000**	**2,000**	**sf**
1.16 Media Room	**1**	**1,050**	**1,050**	**sf**
1.17 Conference Room	**1**	**250**	**250**	**sf**
1.18 Board of Health			**1,805**	**sf**
a Director	1	200	200	
b Administrative Asst	3	70	210	
c Nurses	2	80	160	
d Environmental Health Officer	1	100	100	
e Traveling Meals Coordinator	1	100	100	
f Tobacco Control Program Director	1	100	100	
g Tobacco Control Supplies	1	45	45	
h Clerical Workstation	1	100	100	
I Conference (shared)	1	0	0	
j Waiting	6	50	300	
k Toilet (shared)	1	0	0	
l Library	1	105	105	
m Plan Review	1	100	100	
n Copy Machine	1	15	15	
o Files	1	150	150	
p Coat Closet	1	15	15	
q Medical Supplies	1	85	85	
r Office Suppplies	1	20	20	
1.19 Parks and Recreation Commission			**4,785**	**sf**
a Director	1	200	200	
b Asst Director	1	120	120	
c Administrative Specialist	1	100	100	
d Department Asst	1	80	80	
e Public Counter	1	160	160	
f Waiting/Registration (shared w/ floor)	6	525	3,150	
g Copy Machine	1	45	45	
h Laminator	1	30	30	

l Files	1	80	80	
j Catalogs	1	30	30	
k Sports Equipment	1	670	670	
l Misc. Sports Equip./First Aid	1	100	100	
m Coat Closet	1	10	10	
n Office Supplies	1	10	10	
1.20 Youth Commission			**1,005**	**sf**
a Director	1	200	200	
b Social Workers/Counseling	2	120	240	
c Clinical Interns	2	110	220	
d Receptionist/Office Manager	1	250	250	
e Clinical Records	1	60	60	
f Coat Closet	1	10	10	
g Office Supplies	1	25	25	
1.21 Veterans Department			**300**	**sf**
a Director	1	120	120	
b Director's Asst (part time)	1	80	80	
c Storage	1	100	100	
1.22 General Storage	1	1,320	**1,320**	**sf**
1.23 Building Services			**380**	**sf**
a Janitor closets	2	50	100	
b Boiler Room	1	180	180	
c Electrical Room	1	100	100	
1.31 Men's Rooms			**45**	**sf**
1.32 Women's Rooms			**45**	**sf**
Total*			**30,000**	**sf**

PHASE 2A

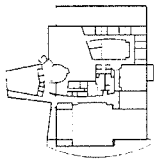
PROGRAM	QTY	AREA	TOTAL	SF
2.01 Gymnasium			**8,555**	**gsf**
a Gymnasium	1	7,385	7,385	
b Bleachers	120	6	720	
c Althletic Storage	1	450	450	
Total*			**8,555**	**sf**

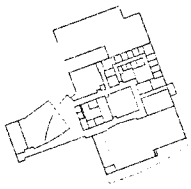
PHASE 2B

PROGRAM	QTY	AREA	TOTAL	SF
2.02 Natatorium			**9,035**	**gsf**
a Swimming Pool (25 yards / 8 lanes)	1	8,415	8,415	
b Bleachers	6	35	210	
c Pool Storage	1	165	165	
d Pool Filter / Equipment	1	245	245	
2.03 Locker Rooms			**2,960**	**sf**
a Male Lockers	100	12	1,200	
b Male Toilets/Showers	1	280	280	
c Female Lockers	100	12	1,200	
d Female Toilets/Showers	1	280	280	
2.04 Fitness Center			**4,425**	**sf**
a Aerobics	1	1,000	1,000	
b Equipment Room	1	2,750	2,750	
c Pool Spectators	1	675	675	
2.21 Men's Rooms			**260**	
2.22 Women's Rooms			**360**	
Total*			**17,040**	**sf**

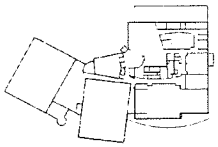
6. Cost Opinion

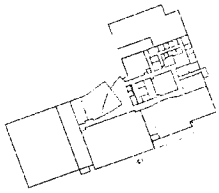
The preferred design is represented as Scheme A. Scheme B was an attempt to "straighten" the building in order to reduce costs that might be associated with non-rectilinear components. Unfortunately this would require the removal and construction of a new filter building (Scheme A would not - although it might be desirable to do so). In the end both schemes were, relatively similar in cost. Various options are also indicated, although they may not be feasible or advisable. These include the cost of the project on a flat (but unidentified) site and the cost of various parking schemes for all of the schemes.





	Scheme A	Scheme B
Phase 1 (Community Center and Parking Garage)		
Conditions	$977,200	$977,200
Sitework	$1,859,740	$1,941,765
Concrete	$396,910	$396,910
Masonry	$272,875	$272,875
Steel	$917,775	$917,775
Carpentry	$174,950	$174,950
Thermal	$744,045	$744,045
Doors	$169,700	$169,700
Finish	$751,620	$751,620
Specialties	$68,100	$68,100
Equipment	$151,250	$151,250
Furnishings	$0	$0
Special	$3,878,750	$3,878,750
Conveying	$195,000	$195,000
Mechanical	$1,435,900	$1,435,900
Electrical	$875,825	$875,825
OH&P	$1,286,965	$1,295,170
Contingency	$643,485	$647,585
Bonds	$118,940	$119,590
Furniture	$333,000	$333,000
Fitness Equipment	$0	$0
Design Fees	$1,089,000	$1,096,000
Peer Review	$10,000	$10,000
Legal Fees	$50,000	$50,000
Bid Printing	$20,000	$20,000
Contingency	$1,491,900	$1,501,400
Clerk of the Works	$75,000	$75,000
Testing	$30,000	$30,000
Sub Total	**$18,017,930**	**$18,129,410**





	Scheme A	Scheme B
Phase 2 (Gymnasium and Natatorium)		
Conditions	$476,385	$476,385
Sitework	$497,140	$483,390
Concrete	$378,890	$378,890
Masonry	$582,015	$623,825
Steel	$461,125	$461,125
Carpentry	$69,075	$69,075
Thermal	$462,605	$417,605
Doors	$103,650	$103,650
Finish	$592,025	$592,025
Specialties	$56,000	$56,000
Equipment	$111,850	$111,850
Furnishings	$0	$0
Special	$540,000	$706,875
Conveying	$0	$0
Mechanical	$561,050	$561,050
Electrical	$264,380	$264,380
OH&P	$773,430	$795,920
Contingency	$257,810	$265,310
Bonds	$58,900	$60,235
Furniture	$0	$0
Fitness Equipment	$120,000	$120,000
Design Fees	$500,000	$514,000
Peer Review	$10,000	$10,000
Legal Fees	$50,000	$50,000
Bid Printing	$20,000	$20,000
Contingency	$624,630	$642,760
Clerk of the Works	$75,000	$75,000
Testing	$30,000	$30,000
Sub Total	**$7,675,960**	**$7,889,350**
Total	**$25,693,890**	**$26,018,760**

	Scheme A	Scheme B	"Flat Site"
Options			
Build-Out 2nd Floor	$709,350	$703,350	$709,350
Replace Filter Equipment	$117,000	N/A	$117,000
or			
Replace Filter Building	$427,000	$427,000	$427,000
By-Phase Totals			
Underground Parking (106,547 sf)	$6,589,200	$6,589,200	$7,109,400
or			
Structured Parking (106,547 sf)	N/A	N/A	$3,641,400
or			
At-Grade Parking (106,547 sf)	N/A	N/A	$1,618,400
Community Center (38,635 sf)	$10,990,200	$11,379,400	$10,472,000
Gymnasium (12,992 sf)	$4,805,700	$4,830,500	$4,687,100
Natatorium (17,790 sf)	$2,852,300	$2,836,900	$2,733,700

Note: By-Phase Costs include soft costs.