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BROOKHAVEN AT LEXINGTON

Impact Analysis On Public Services

1. Project Description

Symmes Life Care, Inc. d/b/a Brookhaven at Lexington is a non-profit age-restricted (62 years+) life care community providing housing and health care services to the elderly. The existing facility was initially constructed in 1987 on 26-acres located on the easterly side of Waltham Street (see **Figure 1 – Locus Map**). Modifications, special permits, and re-zoning efforts in 1994, 1999 and 2004 resulted in the creation of 240 Independent Living Units, 20 Assisted Care Units and 49 Nursing Care beds for an overall total of 309 Units.

Recently, an additional 6.11 acres of land was acquired by Brookhaven adjacent to and northerly of the existing campus. Brookhaven proposes to rezone the recently acquired land, to add 49 Independent Living Units on that land and to modify the existing campus. The overall project would include 289 Independent Living Units, 50 Assisted Care Units, and 12 Nursing Care beds for an overall total of 351 units (see **Figure 2 – Site Plan**).

The rezoning effort requires preparation of this Impact on Public Services, which has been prepared in accordance with §175-71B(7) of the Town of Lexington Planning Board Development Regulations. Given that the existing Brookhaven facility was constructed nearly 30 years ago, and that the last modification was made more than 10 years ago, this analysis will evaluate potential impacts associated with the current proposed expansion. Thus, this analysis will focus on the additional 49 Independent Living Units, 30 Assisted Care Units and on the reduction of 37 Nursing Care beds that would result from the requested zoning change.

Residents of Brookhaven must be age 62 or older; no residents may be less than 62-years old. The average age of Brookhaven's resident is 86 years. Therefore, as no school age children may reside at Brookhaven, the project will have no impact on the Lexington School District.

2. Sanitary Sewer

Town of Lexington provides sanitary sewer service to the area consisting of an eight-inch gravity sewer main located in Waltham Street. The existing sewer in Waltham Street flows to a manhole at Brookhaven's existing main entrance and then flows westerly and northerly to a pump station on Concord Street.

The existing Brookhaven facility is serviced by an eight-inch sewer main discharging to a sewer manhole located in Waltham Street. As part of the Commons Expansion, modifications to the

sewer within the Brookhaven campus will be required; however, the sewer will continue to discharge to the Lexington system at its present location.

The proposed North Building will result in 49 new Independent Living Units. Based on discussions with the Lexington Engineering Department, an eight-inch sewer will be provided from the North Building to a manhole located in Waltham Street north of the existing Brookhaven connection. Given the difference in elevations, and the existing utilities located in Waltham Street, it is likely that the sewer connection will include a drop manhole on the Brookhaven property and connection to the existing manhole.

Water use records for the existing Brookhaven campus from 2011 through 2013 were reviewed (see **Appendix A**). Note that a water meter malfunction occurred in September 2014. Subsequent water use information has been estimated and was not used in this evaluation. The water meter is being replaced in Spring 2016 as a fully redundant system. The current water use averages 28,600 gallons per day, or 92.5 gallons per day per unit. Based on current usage, the North Building would be expected to increase sewer flows by approximately 4,535 gallons per day. The overall increase in sewage discharged to the Lexington sewer system from both the North Building and the Commons Expansion would be 3,885 gallons per day. Based on discussions with the Lexington Engineering Department, the Lexington sewer mains have sufficient capacity to handle this negligible additional flow.

The Engineering Department expressed concerns regarding clogging of the Town's sewer pump station on Concord Avenue. Brookhaven will conduct the following in its efforts to help improve the sewer pump station operations:

- Brookhaven will conduct an initial training session with its employees and residents of the Independent Living Units as to proper procedures for flushing of wipes, and to inform staff and residents of those items not suitable for flushing (see **Appendix B**).
- Brookhaven will research and will use wipes that are known to readily biodegrade.

Based on the limited additional flow, the educational outreach to staff and residents, and its commitment to use biodegradable wipes, the proposed Brookhaven expansion will have no significant impact on the Lexington sewer system.

3. Water Supply

The Town of Lexington provides potable water service in the form of a ten-inch main located in Waltham Street. The 10-inch main extends to and dead ends at the Lexington/Waltham town line. The existing Brookhaven campus is serviced by an eight-inch main internally looped around the campus. Modifications will be needed internal to the campus due to the proposed project.

Based on discussions with the Lexington Engineering Department, potable water service to the North Commons Expansion would be provided by an eight-inch lateral connecting to the water main near the north (emergency) access. The water service would loop to and connect with the eight-inch lateral servicing the existing Brookhaven campus. Looping the water service in this area is expected to benefit water quality in the area by reducing the length of the dead-end section of water main on Waltham Street.

Service flow rate and pressures in the area were last evaluated by the Town in 1993. At that time, a total flow of 1392 gallons per minute at residual pressure of 91 psi was measured (**Appendix C**). Given the negligible additional flow, the system has sufficient capacity and pressure for the proposed project. It is likely that a booster may be needed for fire flows in the North Commons Expansion; such booster would be independent of the Town's system.

Given the small additional flows for the proposed project, no deleterious impacts to the Town's water supply system are expected. The loop connection may, in fact, serve to benefit water quality in this area of Waltham Street.

4. Drainage

Stormwater generated by the proposed project will be captured, treated, recharged and conveyed to Chester Brook. The system will be designed to meet Town requirements and will conform to Massachusetts Department of Environmental Protection (MassDEP) Stormwater Regulations such that no increase in flow rate and volume will occur as a result of the project.

Stormwater eventually discharges to the Charles River, which has a Total Maximum Daily Load (TMDL) established for phosphorus. In order to ensure that the project will not increase phosphorus loading, Brookhaven does not currently and will not use phosphorus-containing fertilizers at the facility.

No impact to drainage is expected as a result of the project.

5. Streets

A traffic evaluation has been conducted as part of the project. The traffic evaluation concluded that the project will result in 3 new trips entering the Site and 5 new trips exiting the Site during the weekday morning peak hour. During the weekday afternoon peak hour, the Project would result in seven new entering trips and 5 new existing trips. During the Saturday peak hour, five new entering and five new exiting trips are expected. The minimal additional traffic is well within normal daily variation and is not expected to impact traffic conditions in the area.

6. Public Transportation

Brookhaven supports LexPress and provides for public transportation services at the facility. No change in access/availability to public transportation will occur as a result of the Project. Brookhaven will continue to support LexPress.

7. Fire Suppression

Several meetings and discussions were held with the Lexington Fire Department. Layout of emergency access was discussed with and approved by the Fire Department. Hydrants will be provided as needed. The buildings will be serviced with sprinkler systems; a booster pump may be needed to achieve required pressure. No impacts are anticipated.

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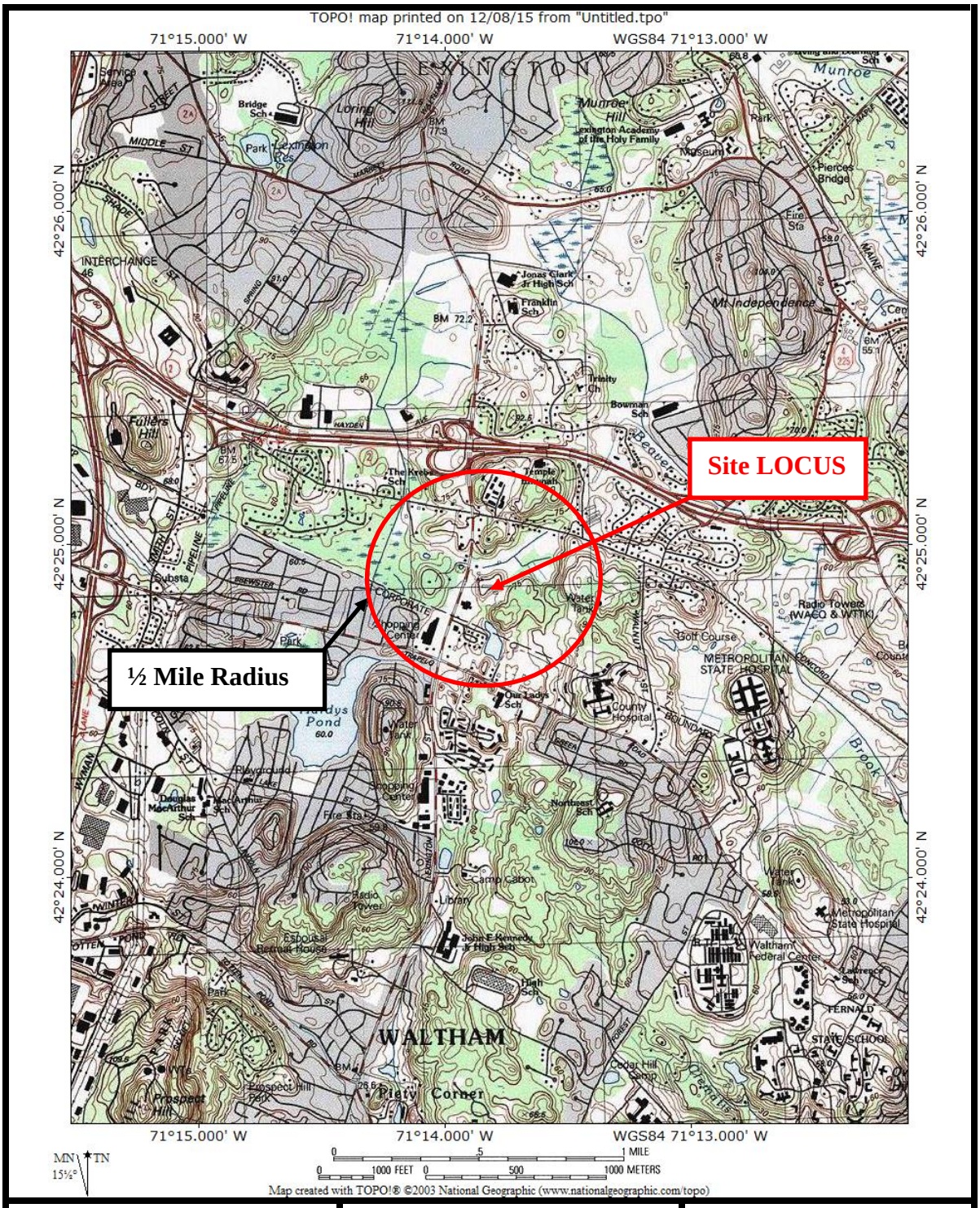
FIGURES



Site LOCUS

Figure 1

990 Waltham Street
Lexington, MA

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44 Wood Avenue · Mansfield, MA

N
W E
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BROOKHAVEN REPOSITIONING

CONTEXT PLAN

BROOKHAVEN AT LEXINGTON

DiMella Shaffer
Architecture | Interior Design | Planning

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APPENDIX A

Water Use Records

Fiscal Year	Account #	Period	Start Date	End Date	Number of Days	Volume (HCF)	Volume TOTAL	$$	$$ TOTAL
FY 07 TOTAL							12129		$111,349.19
FY 08	100989500	Winter	8/24/2007	4/28/2008	248	318		$ 5,890.10	
FY 08	100989600	Winter	8/24/2007	4/28/2008	248	8906		$ 83,367.28	
TOTAL							9224		$ 89,257.38
FY 08	100989500	Summer	4/29/2008	8/29/2008	122	214		$ 3,805.64	
FY 08	100989600	Summer	4/29/2008	8/29/2008	122	5263		$ 47,261.74	
TOTAL							5477		$ 51,067.38
FY 08 TOTAL							14701		$140,324.76
FY 09	100989500	Winter	8/30/2008	4/14/2009	227	228		$ 4,106.08	
FY 09	100989600	Winter	8/30/2008	4/14/2009	227	7631		$ 68,526.38	
TOTAL							7859		$ 72,632.46
FY 09	100989500	Summer	4/15/2009	10/15/2009	183	343		$ 6,317.86	
FY 09	100989600	Summer	4/15/2009	10/15/2009	183	8778		$ 80,819.94	
TOTAL							9121		$ 87,137.80
FY 09 TOTAL							16980		$159,770.26
FY 10	100989500	Winter	10/16/2009	4/22/2010	188	279		$ 5,000.10	
FY 10	100989600	Winter	10/16/2009	4/22/2010	188	7076		$ 61,160.09	
TOTAL							7355		$ 66,160.19
FY 10	100989500	Summer	4/23/2010	11/22/2010	213	416		$ 2,302.64	
FY 10	100989600	Summer	4/23/2010	11/22/2010	213	9121		$ 29,516.68	
TOTAL							9537		$ 31,819.32
FY 10 TOTAL							16892		$ 97,979.51
FY 11	100989500	Winter	11/23/2010	5/16/2011	174	174		$ 2,877.02	
FY 11	100989600	Winter	11/23/2010	5/16/2011	174	5670	32.5862069	$ 49,839.30	
TOTAL							5844		$ 52,716.32
FY 11	100989500	Summer	5/17/2011	10/5/2011	141	399		$ 8,508.91	
FY 11	100989600	Summer	5/17/2011	10/5/2011	141	7959		$ 78,918.81	
TOTAL							8358		$ 87,427.72
FY 11 TOTAL							14202		$140,144.04
FY 12	100989500	Winter	10/6/2011	5/10/2012	217	172		$ 3,176.68	
FY 12	100989600	Winter	10/6/2011	5/10/2012	217	5653	26.05069124	$ 55,399.40	
TOTAL							5825		$ 58,576.08
FY 12	100989500	Summer	5/11/2012	11/9/2012	182	289		$ 6,140.35	
FY 12	100989600	Summer	5/11/2012	11/9/2012	182	6909		$ 70,057.26	
TOTAL							7198		$ 76,197.61
FY 12 TOTAL							13023		$134,773.69
FY 13	100989500	Winter	11/10/2012	5/2/2013	173	220		$ 4,460.20	
FY 13	100989600	Winter	11/10/2012	5/2/2013	173	6102	35.2716763	$ 61,874.28	
TOTAL							6322		$ 66,334.48
FY 13	100989500	Summer	5/3/2013	11/7/2013	188	436		$ 9,868.72	
FY 13	100989600	Summer	5/3/2013	11/7/2013	188	7872		$ 81,598.80	
TOTAL							8308		$ 91,467.52
FY 13 TOTAL							14630		$157,802.00
FY 14	100989500	Winter	11/8/2013	5/9/2014	182	255		$ 5,394.40	
FY 14	100989600	Winter	11/8/2013	5/9/2014	182	1906		$ 19,650.86	
TOTAL							2161		$ 25,045.26
FY 14	100989500	Summer	5/10/2014	11/4/2014	178	270		$ 5,862.70	
FY 14	100989600	Summer	5/10/2014	11/4/2014	178	7000		$ 73,500.00	
TOTAL							7270		$ 79,362.70
FY 14 TOTAL							9431		$104,407.96
FY 15	100989500	Winter	11/5/2014	5/13/2015	189	200		$ 4,103.60	
FY 15	100989600	Winter	11/5/2014	5/13/2015	189	7000		$ 73,500.00	
TOTAL							7200		$ 77,603.60
FY 15	100989500	Summer	5/14/2015	11/3/2015	173	771		$ 18,031.25	
FY 15	100989600	Summer	5/14/2015	11/3/2015	173	2744		$ 28,290.64	
TOTAL							3515		$ 46,321.89
FY 15 TOTAL							10715		$123,925.49

* 9/18/14 Per Robyn at Town of Lexington, meter failure. Will have meter replaced. Use 3 year average for billing

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APPENDIX B

What Not to Flush

What not to flush

Pre moistened wipes	Medications or supplements
Bandages or dressings	Cleaners or disinfectants
Cotton balls or swabs	Cigarette butts
Catheters	Dental floss
Wrappers	Diapers
Feminine hygiene products	Hair
Facial Tissues	Paper towels
Test strips	Hypodermic needles
Topical solutions	Dust, dirt or lint

Massachusetts Water Resources Authority
www.mwra.com
04/02/2014

What You Flush Matters

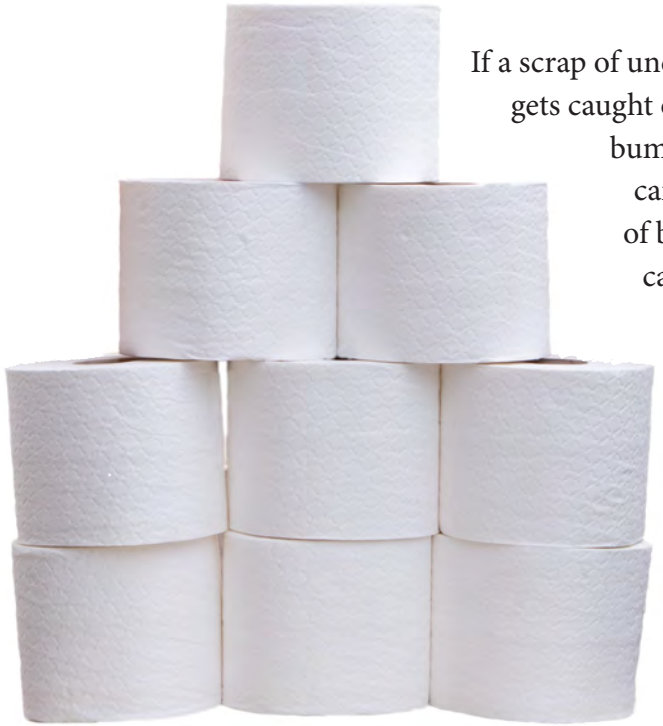
ways to keep your home, workplace and the environment healthy

Flush only human waste and toilet paper.

Even if they're small, even if the package says "flushable," some everyday items can cause messy and expensive problems for the plumbing in your home or health care facility.

These items can also get caught in the machinery of your local sewer treatment plant.

Products that might seem safe to flush down the toilet, such as **personal care wipes, dental floss and paper towels**, don't dissolve well - or at all - in water.



If a scrap of undissolved material gets caught on a nick, bend or bump within a pipe, it can trigger a growth of buildup that could cause a sewer back-up in your home, workplace or neighborhood.

Check the back of this flyer for a list of more items that should never be flushed.

It's a toilet, not a trash can!

Flushing meds and chemicals can harm aquatic life.

Everyday chemicals from medications, supplements, disinfectants and household cleansers can travel from homes and health care facilities through sewers and wastewater treatment plants.

These chemicals cause harm to the marine environment and aquatic life when they are discharged to streams, rivers, and oceans.

Medications and supplements should not be flushed or disposed of through the toilet or drain. They should be wrapped and thrown in the trash, brought to your local drug take-back site, or disposed of in accordance with your health care facility's guidelines.

Unwanted household cleansers, topical solutions and disinfectants can also harm the marine environment and should not be poured down the toilet or drain. You should use them up, bring them to your local household hazardous waste site, or follow your health care facility's disposal guidelines.

Proper disposal protects your health and the environment.

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APPENDIX C

Service Flow 1993

#	STREET	opp	DATE	x=2.5	STATIC	RESID	PITOT	FLOW	CROSS	comment
1050	waltham st		May-93	x	91	85	69	1392		
177	waltham st		Oct-98		98	80	18	1405		
251	waltham st		Nov-97		95	82	22	1553		high school
251	waltham st		Nov-97		97	86	34	1930		hi sch loading dock
438	waltham st		Oct-98		86	82	40	2094		
748	waltham st		Oct-98		87	79	40	2094	allen st	
	waltham st		Nov-97	x	89	89	25	840	marrett rd	
	waltham st		Nov-97		95	93	20	1481	vinebrook rd	
60	ward st		Oct-98		103	58	18	1405		
10	washington		Oct-99		72	55	35	1959		
18	watertown st		Nov-97	x	98	95	60	2564		
46	webster		Oct-99		95	80	31	1843		
	westview st		Nov-97		130	110	72	2808		bikepath
	whipple rd		Nov-97	x	85	80	50	1186	fiske rd	
4	whitman cir		Oct-00		100	86	22	1553		
15	whittier rd		Oct-98		82	40	22	1553		
44	williams rd		Oct-98		105	87	30	1813	bertwell rd	
26	wilson		Oct-99		87	82	30	1813		
	winchester dr		Nov-97	x	67	60	38	1033	tyler rd	
89	winter st		Oct-98		98	83	28	1752	morris st	opp
	winter st		Nov-97		112	90	58	2521	fifer ln	
	winthrop rd		Oct-00		90	70	10	1047	vinebrook rd	
37	winthrop rd		Oct-98		89	80	40	2094	sherburne rd	
199	woburn		Oct-99		95	85	46	2245		
71	woburn st		Oct-00		102	70	6	999	cottage st	
	woburn st		Aug-96		95	83	14	1239	lowell st	
131	woburn st		Oct-98		93	89	7	1000	utica st	opp
425	woburn st		Nov-97		105	87	40	2094		
510	woburn st		Aug-96		90	77	8	1000		town line
	woburn st		Nov-97		100	91	52	2387	lowell st	
	woburn st		Nov-97		98	95	50	2341		countryside vil
88	wood st		Oct-00		100	78	27	1720		
	wood st		Oct-99		105	85	49	2317	alpine	
	wood st		Aug-96		110	80	43	2171	conestoga rd	
	wood st		Nov-97		105	77	60	2564	katahdin dr	
16	woodcliffe rd		Oct-98	x	58	53	21	770		
37	woodland rd	x	Nov-97		76	67	19	1443		
27	woodpark ci		Oct-99		110	85	45	2221		
21	worthen rd		Nov-97		94	72	37	2014		
	worthen rd		Nov-97		99	92	53	2410	3 cap parker	opp
33	wyman rd		Oct-98	x	115	100		1250		
7	wyman rd		Oct-98		118	75	27	1720		
12	young st		Oct-98		85	40	15	1282		

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END OF REPORT

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