

FINAL EVALUATION OF ALTERNATIVES

ELECTRIC LOADS



WMGLD

P.O. BOX 190 480 North Ave.

Wakefield, MA 01880

Tel. (781) 246-6363 Fax (781) 246-0419

Peter D. Dion, General Manager

John J. Warchol, Chair

Philip Courcy, Secretary

Kenneth J. Chase, Jr.

Jennifer Kallay

Thomas Boettcher

December 2, 2020

Dear Kevin Alles,

The Wakefield Municipal Gas & Light Dept currently provides power to Northeast Metro Tech at 100 Hemlock Rd, Wakefield MA. We understand a new school is being planned and will be built next to the existing school. WMGLD is committed to providing power to the new Northeast Metro Tech and maintaining power to the existing school until it is no longer needed.

Regards,

Vinnie McMahon

Senior Engineer, WMGLD

vmcmahon@wmgld.com

Projected Preliminary Electrical Connected Loads

Lighting:

(Code 3 watts/SF: 720 kW) 720 kW
(projected installed load at .75w/SF roughly 180kW, plus
site lighting)

Receptacles: (1 watt / SF) 240 kW

Mechanical:

- | | |
|---|--------|
| 1. Chillers | 720kW |
| 2. Pumps (285hp) | 212 kW |
| 3. Air Handling Units | 192 kW |
| 4. Miscellaneous Electric Heat
(Cabinet Htrs/Unit Heaters/Etc.) | 50 kW |
| 5. Make-up Air Unit(s) | 25 kW |
| 6. Miscellaneous AC Split Systems
12 At 2 tons each | 24 kW |
| 7. Exhaust Fans (Qty 25)
Majority fractional hp 1/3hp - 1/4hp
Largest 3hp (Qty 4) | 15 kW |

Plumbing:

- | | |
|-------------------------------|-------|
| 1. Electric Hot Water Heaters | 15 kW |
| 2. Miscellaneous Circ Pumps | 5 kW |
| 3. Miscellaneous Pumps | 5 kW |

Elevator(s): 90kW

Miscellaneous Power: 100 kW
(Appliances, Copiers, Elec Heat Trace, etc)

Kitchen: (All electric) 200 kW



Total connected:

2,613 kW

2,613 kW @ 480V = 3,148A

Projected Preliminary Electrical Connected Loads:

2,613 kW/240,000 SF = 10.0kW/SF

Based on projected connected loads, secondary service size is 4,000 amps.

Projected exterior self-contained diesel generator 600kW.

Projected Preliminary Electrical Connected Loads

Lighting:

(Code 3 watts/SF: 1,215kW) 1,215 kW
 (projected installed load at .75w/SF roughly 320kW, plus
 site lighting)

Receptacles:

405 kW

Mechanical:

- | | |
|---|----------|
| 1. Chillers | 1,215 kW |
| 2. Pumps (210hp) | 212 kW |
| Chilled Water - 60hp | |
| Hot Water - 50hp | |
| Misc – 100hp | |
| 3. Air Handling Units | 324 kW |
| 4. Miscellaneous Electric Heat
(Cabinet Htrs/Unit Heaters/Etc.) | 75 kW |
| 5. Make-up Air Unit(s) | 50 kW |
| 6. Miscellaneous AC Split Systems | 36 kW |
| 7. Exhaust Fans (Qty 35)
Majority fractional hp 1/3hp - 1/4hp
Largest 3hp (Qty 4) | 25 kW |

Plumbing:

- | | |
|-------------------------------|-------|
| 1. Electric Hot Water Heaters | 25 kW |
| 2. Miscellaneous Circ Pumps | 5 kW |
| 3. Miscellaneous Pumps | 5 kW |

Elevator(s):

120kW

Miscellaneous Power:

(Appliances, Copiers, Elec Heat Trace, etc)

100 kW



Kitchen: (All electric)

200 kW

Total connected:

3,937 kW

3,937kW @ 480V = 4,743A

Projected Preliminary Electrical Connected Loads:

4,743 kW/405,000 SF = 11.7kW/SF

Based on projected connected loads, secondary service size is 6,000 amps.

Projected exterior self-contained diesel generator 600kW.

Projected Preliminary Electrical Connected Loads

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(Code 3 watts/SF: 1,215kW) 1,215 kW
(projected installed load at .75w/SF roughly 320kW, plus
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| Misc – 100hp | |
| 3. Air Handling Units | 324 kW |
| 4. Miscellaneous Electric Heat
(Cabinet Htrs/Unit Heaters/Etc.) | 75 kW |
| 5. Make-up Air Unit(s) | 50 kW |
| 6. Miscellaneous AC Split Systems | 36 kW |
| 7. Exhaust Fans (Qty 35) | 25 kW |
| Majority fractional hp 1/3hp - 1/4hp | |
| Largest 3hp (Qty 4) | |

Plumbing:

- | | |
|-------------------------------|-------|
| 1. Electric Hot Water Heaters | 25 kW |
| 2. Miscellaneous Circ Pumps | 5 kW |
| 3. Miscellaneous Pumps | 5 kW |

Elevator(s): 120kW

Miscellaneous Power: 100 kW
(Appliances, Copiers, Elec Heat Trace, etc)



Kitchen: (All electric)

200 kW

Total connected:

3,937 kW

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| 7. Exhaust Fans (Qty 35)
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Largest 3hp (Qty 4) | 25 kW |

Plumbing:

- | | |
|-------------------------------|-------|
| 1. Electric Hot Water Heaters | 25 kW |
| 2. Miscellaneous Circ Pumps | 5 kW |
| 3. Miscellaneous Pumps | 5 kW |

Elevator(s): 120kW

Miscellaneous Power: 100 kW
(Appliances, Copiers, Elec Heat Trace, etc)



Kitchen: (All electric)

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