
ATTACHMENT A
APPLICATION FOR USE SPECIAL PERMIT

Appendix B
TOWN OF ACTON
APPLICATION FOR SPECIAL PERMIT
(ZONING BYLAW)

Indicate the type of Special Permit Requested: Use Special Permit

Under Zoning Bylaw Section: 3.4.7 (Other Public Use) and 3.8.4.10 (Accessory Use)

Refer to the "Rules and Regulations for Special Permits" available from the Planning Department for details on the information and fees required for this application. Contact the Planning Department at 978-929-6631 with any questions concerning the Rules. Incomplete applications may be denied.

Please type or print your application.

1. Location and Street Address of proposed SPECIAL PERMIT 180 and 182 Skyline Drive
2. Applicant's Name Alan Cathcart, Water/Sewer Superintendent, Town of Concord
Address 135 Keyes Road, Concord MA 01742
Telephone 978-318-3250 Email ACathcart@concordma.gov
3. Record Owner's Name Town of Concord
Address 135 Keyes Road, Concord MA 01742
Telephone 978-318-3206 Email ACathcart@concordma.gov
4. Surveyor Environmental Partners Group, Inc.
Address 1900 Crown Colony Drive, Suite 402, Quincy, MA 02169
Telephone 617-657-0200 Email pcm@envpartners.com
5. Engineer Paul C. Millet, P.E., Environmental Partners Group, Inc.
Address 1900 Crown Colony Drive, Suite 402, Quincy, MA 02169
Telephone 617-657-0200 Email spcm@envpartners.com
6. Town Atlas Map(s)/Parcel Number(s) Map C4, Parcel No. C4-14, C4-29 (easement), and C4-32
7. Zoning District (s) of Parcel(s) R8 and R10/8
8. Detailed description of the proposed SPECIAL PERMIT:
To meet strict drinking water regulatory compliance requirements, the Town of Concord is proposing to replace their existing ozone disinfection facility with a new state of the art water treatment plant. The new treatment plant will include state of the art treatment technologies and have the same hydraulic capacity of the existing disinfection facility. For additional details refer to the cover letter and contents of this application.
9. If applying for a USE SPECIAL PERMIT, declare all hazardous materials or wastes that are expected to be generated, stored, used, or disposed of by the proposed USE. The USE must comply with the TOWN'S Hazardous Materials Control Bylaw: The proposed water treatment plant will store several hazardous chemicals for the treatment of potable drinking water includign the following: potassium hydroxide - 1,200 gallons; potassium permanganate - 100 pounds; polyaluminum chloride - 800 gallons; sodium hypochlorite - 300 gallons; sodium fluoride - 300 pounds; calcium thiosulfate - 20 gallons; zinc metaphosphate - 190 pounds. All chemicals will be stored in designaged areas that include secondary containment in accordance with DEP requirements.

10. If there was a change in USE, please describe the previous USE on the site: There is no change in the principal use of the site (the treatment of public drinking water).
11. If any SPECIAL PERMITS have been filed previously for this site give file numbers: Plan file 3405 (#8/25/94-346).
12. Please indicate expected number of employees, occupants and/or residents: 2, part time (2 to 8 hrs /day)
13. If a restaurant is proposed, please indicate number of proposed seats: N/A
14. Hours of operation: 24 hours
15. Please indicate the following:
 Total NET FLOOR AREA (existing): 1,760 square feet
 Total NET FLOOR AREA (proposed): 9,338 square feet
16. Describe any proposed modifications to the exterior features or appearances of the STRUCTURE: The existing brick ozone disinfection building will be demolished. The proposed Nagog Pond Water Treatment Plan will consist of a two story building with an exterior facade consisting of architectural cement masonry units (CMU). Refer to the attached plans.
17. If the proposed SPECIAL PERMIT is located on a developed site, please provide the site conditions for the following characteristics:
 LOT size: Parcel C4-14 = 55.85 acres, Parcel C4-32 = 3.75 acres, Parcel C4-29 (easement) = .19 acres.
 Total LOT coverage (existing): 17,374 square feet Total =
 Total LOT coverage (proposed): 29,758 square feet 59.79 acres
 Total OPEN SPACE (existing): 59.39 acres
 Total OPEN SPACE (proposed): 59.11 acres
 Total parking spaces provided on the site: 5
 Total parking spaces dedicated to proposed use (existing): 3
 Total parking spaces dedicated to proposed use (proposed): 5

The undersigned hereby apply to the Board of Selectmen for a public hearing and a special permit under Section 10.3 of the Zoning Bylaw approving the attached use form.

The undersigned hereby certify that the information on this application and plans submitted herewith is correct, and that all applicable provisions of Statutes, Regulations, and Bylaws will be complied with. The above is subscribed to and executed by the undersigned under the penalties of perjury in accordance with Section 1-A of Chapter 268, General Laws of the Commonwealth of Massachusetts.

8-24-16 _____
 Date Signature of Petitioner(s) Signature of Petitioner(s)

RECORD OWNER'S KNOWLEDGE AND CONSENT

I hereby assert that I have knowledge of and give my consent to the application presented above.

8-24-16 _____
 Date Signature of Record Owner(s) Signature of Record Owner(s)

ATTACHMENT B
APPLICATION FOR SITE PLAN SPECIAL PERMIT

Appendix B
TOWN OF ACTON
APPLICATION FOR SITE PLAN SPECIAL PERMIT

For The proposed Nagog Pond Water Treatment Plant (WTP)
Under Zoning Bylaw Section 3.4.7 (Other Public Use), 3.8.4.10 (Accessory Use), and 10.4.1.2

Refer to the "Rules and Regulations for Site Plan Special Permits" available from the Building Department or the Planning Department for details on the information and fees required for this application. Contact the Planning Department at 978-929-6631 or Building Department at 978-929-6633 with any questions concerning the Rules. Incomplete applications may be denied.

Please type or print your application.

1. Location and Street Address of Site 180 & 182 Skyline Drive (formerly 339 Nagog Hill Road and 13 Hazelnut Road, Rear)
2. Applicant's Name Alan Cathcart, Water/Sewer Superintendent, Town of Concord
Address 135 Keyes Road, Concord, MA
Telephone 978-318-3250 Email ACathcart@concordma.gov
3. Record Owner's Name Town of Concord
Address 135 Keyes Road, Concord, MA
Telephone 978-318-3206 Email ACathcart@concordma.gov
4. Town Atlas Map(s)/Parcel Number(s) Map C4, Parcels C4-14, C4-29 (easement) and C4-32
5. Zoning District (s) of Parcel(s) R8 and R8/10

If any site plans have been filed previously for this site give file numbers: #3405

The undersigned hereby apply to the Board of Selectmen for a public hearing and a site plan special permit under Section 10.4 of the Zoning Bylaw approving the attached site plan.

The undersigned hereby certify that the information on this application and plans submitted herewith is correct, and that all applicable provisions of Statutes, Regulations, and Bylaws will be complied with. The above is subscribed to and executed by the undersigned under the penalties of perjury in accordance with Section 1-A of Chapter 268, General Laws of the Commonwealth of Massachusetts.

8-24-16  _____
Date Signature of Petitioner(s) Signature of Petitioner(s)

RECORD OWNER'S KNOWLEDGE AND CONSENT

I hereby assert that I have knowledge of and give my consent to the application presented above.

8-24-16  _____
Date Signature of Record Owner(s) Signature of Record Owner(s)

ATTACHMENT C
ZONING COMPLIANCE ANALYSIS

Nagog Pond Water Treatment Plant
Site Plan Special Permit/Use Special Permit #11/20/2015 – 459

ZONING COMPLIANCE ANALYSIS

This firm represents the Applicant, Town of Concord, which is undertaking a critical and significant infrastructure project to update its public drinking water supply facility at Nagog Pond. The project has two major components: (a) replacing the original 1909 16-inch diameter cast iron intake pipe in Nagog Pond with a new HDPE intake pipe; and (b) upgrading and improving the existing ozone disinfection facility for a new state-of-the-art water treatment plant for the production of potable water.

The goal of this project is the consistent production of high quality drinking water that meets existing and future proposed drinking water standards. The current ozone disinfection facility is operating under a Filtration Avoidance Waiver issued by the United States Environmental Protection Agency (EPA) and the Massachusetts Department of Environmental Protection (MassDEP) under the Surface Water Treatment Rule (SWTR). Construction of the proposed intake pipe and new water treatment facility will enable Concord to increase the reliability and resiliency of Nagog Pond as a public water supply source and will allow Concord to release the Filtration Avoidance Waiver under the SWTR.

Concord is committed to designing and operating the new Nagog Pond Water Treatment Plant (WTP) as a zero discharge facility and to utilizing environmentally sensitive technology and practices. As originally designed, Concord proposed a solar photovoltaic (PV) array on the property to provide energy to power the facility. The solar PV array provided environmental benefits for the project, but it was not well-received by certain residents in the neighborhood. In response to concerns raised by the public, Concord will maintain the wooded vegetative buffer between the WTP and the recently constructed homes at Quail Ridge and Acorn Park. To off-set the loss of power generated from the solar PV array, Concord modified its design for the WTP and will utilize an on-site distributed power supply using three Tocogen INV-110e power units (or similar) that will be powered by natural gas and is independent from the energy grid.

A. Property Background.

The site of the existing water treatment plant is located at 180/182 Skyline Drive in Acton. The property consists of two parcels of land owned by the Town of Concord containing approximately 59.60 acres. The two parcels are referred to as Parcel C4-14 and C4-32 on the Town of Acton Assessor's Maps. The parcels are used as the Concord's water supply, including the existing dam/intake structure, ozone disinfection treatment plant, and associated appurtenant facilities. The remaining land is undeveloped forestland and has remained undeveloped for the purpose of sustaining water quality in Nagog Pond.

The existing ozone disinfection facility is located on C4-14. With the design modification to rely on the distributed energy units instead of utilizing a solar PV array, the

physical plant for the new WTP will be located completely on C4-14. The access road for the facility is located primarily on C4-32, but it also proceeds along an easement across Parcel C4-29 to meet Skyline Drive. Parcel C4-14 is in the R-8 Residential District and Parcel C4-32 is located within the Residential 10/8 District and the Affordable Housing Overlay District. The project is in a Zone 4 Groundwater Protection District.

The Acton Zoning Board of Appeals issued Variance Decision No. 94-19 on October 18, 1994 (the "1994 Variance"). The 1994 Variance granted Concord relief from the following sections of the Acton Zoning Bylaw then in force:

- Section 4.1.8.1.b Retain 98% of the existing natural floodplain storage without construction of compensatory storage areas.
- Section 4.3.6.2 Retain volume of groundwater recharge occurring on site to pre-developed condition.
- Section 5.2.2 Frontage on a street required for a building lot.
- Section 6.7.3 Access driveways should consist of a 24 foot wide pavement.
- Sections 6.7.5, 6.7.6, and 6.7.7. Specific requirements for landscaping around the perimeter of the project site and within designated parking areas.
- Section 10.4.3.1 No increase in the peak rate runoff from up to a 10-year design storm.

The Acton Board of Selectman issued a site plan special permit (#8/25/94-346) for the construction of the ozone treatment facility on November 23, 1994. The Town of Concord substantially relied on and exercised the 1994 Variance and 1994 Special Permit for the ozone treatment facility when it obtained a building permit in August 1995 and undertook construction. Concord has continued to operate the ozone treatment facility pursuant to these approvals. Both approvals were recently recorded in the Middlesex South Registry of Deeds at Book 67701, Page 252 (1994 Special Permit), and Book 67701, Page 261 (1994 Variance).

B. Relief Requested.

According to the Table of Principal Uses and § 3.4.7 of the Acton Zoning Bylaw, the proposed WTP is characterized as "other public use." In the R-8 Residential District, an "other public use" requires a special permit and a site plan review special permit from the Board of Selectmen.

As discussed in Section C below, to the extent necessary, Concord relies on the 1994 Variance for aspects of the proposal that continue to require relief from those sections of the Acton Zoning Bylaw.

In addition, as noted in Concord's original November 20, 2015 site plan special permit application, Concord seeks waivers from the Section 3.10 and 3.9.10 of the Site Plan Special Rules and Regulations which require a Traffic Study and an Outdoor Lighting Plan, respectively.

A waiver of the Traffic Study requirements at Section 3.10 is appropriate because the rule requires the completion of a traffic impact study for uses that will likely produce an additional 30 trips ends per peak hour or an average of 400 additional trip ends per weekday based on the most recent edition of the Institute of Transportation Engineers (ITE's) publication "Trip Generation." While the application of the ITE data is debatable given the nature of facility, based on current utilization and the anticipated slight increase due to additional chemical deliveries at the new WTP, Concord still only anticipates a total of 10 trip ends per day. This amount of traffic is well below the daily or even the hourly thresholds that would trigger a need for a traffic study. Therefore, Concord requests a waiver from the Traffic Study requirement for a Site Plan Special Permit.

Similarly, Concord requests a waiver from completing an Outdoor Lighting Plan as described in Section 3.9.10 of the Site Plan Special Permit Rules and Regulations. The revised design plans show the proposed locations of outdoor lighting fixtures and security cameras. The outdoor lighting will include low-level site lighting with motion sensors for security and high-level lighting for unplanned night-time maintenance activities, operated by manual switches only as required. All outdoor lighting at the proposed building will be pointed downward to minimize the potential for neighborhood glare. The design intent of the outdoor lighting is to prevent "nuisance lighting" by incorporating fixtures that contain cutoff visors to prevent light spillage. Accordingly, a waiver of the Outdoor Lighting Plan requirements in Section 3.9.10 is appropriate.

C. General Zoning Bylaw Requirements.

The project to replace the intake pipe in Nagog Pond and renovate the water treatment facility complies with the general zoning requirements under the Acton Zoning Bylaw.

1. Section 3: Principal Use and Accessory Use Regulations

As noted above, under the Table of Principal Uses and § 3.4.7, the WTP is a characterized as "other public use." In the R-8 Residential District, an "other public use" requires a special permit and a site plan review special permit from the Board of Selectmen.

2. Section 4: Overlay Districts

Section 4.1 addresses development within the Flood Plain District. The Flood Plain District "includes all special flood hazard areas in Acton designated as Zone A and AE shown on Zoning Map Number 2, which are the Acton Panels of the Middlesex County Flood Insurance

Rate Map (FIRM), dated July 7, 2014.” Item #7 from the General Notes prepared by Environmental Partners, Plan Sheet No. G-1, states that the “subject property is located in Zone X and Zone AE EL. 208 through 213 of the Flood Insurance Rate Map, as shown on Community Panel No. 250176 0234f, which bears an effective date of July 7, 2014, and is partially within a special flood hazard area.” The project received an Order of Conditions from the Acton Conservation Commission on January 6, 2016.

Note 5 in Table of Principal Uses imposes additional requirements for projects in the Floodway Fringe or a Zone 1, 2, 3 Groundwater Protection District. The project is in a Zone 4 Groundwater Protection District, but some of the work for the intake pipe is within the Floodway Fringe. Note 5 of the Table of Principal Uses states, when “the proposed use will be located in the Floodway Fringe...before granting a special permit under this Section the applicant shall submit the information required under Sections 4.1 or 4.3 and the Board of Selectman shall find that the proposed use complies with the requirements of Section 4.1.8.1 and 4.1.9, and 4.3.8 through 4.3.10 respectively.”

Section 4.1.7.3 expressly states that “[c]onstruction, maintenance and repair of municipal and private water supply structures” is a use permitted within the Floodway Fringe. Since the intake pipe is the only work within the Floodway Fringe, and that work is expressly permitted within the limits of the Floodway Fringe, there is no need for any additional review of this project pursuant to Note 5.

The new WTP building is designed to be on the same location of the existing structure and not within any flood zone or the Floodway Fringe.

The project is also located with the Affordable Housing Overlay District, but the municipal water supply use does not trigger any of the requirements regarding that district under Section 4.4 of the Zoning Bylaw.

3. Section 5 - Dimensional Regulations

For zoning purposes, lots C4-14 and C4-32 are considered merged. Lot C4-14 consists of 55.85 acres and lot C4-32 consists of 3.75 acres for a combined lot size of 59.60 acres. The proposed building will be 34 feet high, which is under 36 feet, the maximum allowable height in the R-8 district. There is no specific minimum open space, nor maximum floor area ratio in the R-8 District.

In the R-8 district the minimum lot area is 80,000 sq. ft. and the minimum lot frontage is 200 feet. The project site exceeds the minimum lot area requirement, but it does not have frontage on a street. Concord has access to the WTP from a public road through an easement over parcel C4-29. When the site was developed in the mid-1990’s, Concord obtained a variance from Section 5.2.2 regarding frontage on a street. The current proposal uses the same access,

and does not exceed the nonconformity that was the basis of the 1994 Variance. Accordingly, Concord can continue to rely on the 1994 Variance from the frontage requirements.

4. Section 6 - Parking Standards

Section 6.7.3 requires each lot to have one access driveway through its frontage which “shall be 24 feet wide, unless, in the opinion of the Special Permit Granting Authority... a wider and/or greater number of access driveways is necessary to provide adequate area for safe vehicular turning movements and circulation.” In 1994, Concord obtained a variance from the requirement in Section 6.7.3 to have a 24-foot wide driveway. At that time, Concord constructed a driveway that was only 12 feet wide.

In connection with the new water treatment facility, Concord is widening the access driveway from twelve to twenty feet. In consultation with the Acton Fire Department and the Conservation Commission, Concord agreed to increase the width of the driveway to 18 feet with a crushed stone shoulder of one foot on either side of the driveway for a total width of 20 feet. Though the width is still less than the required driveway width, the 1994 Variance is still applicable, because Concord has not increased the intensity of the nonconformity for which the variance was issued. See Barron Chevrolet, Inc. v. Town of Danvers, 419 Mass. 404, 408-09 (1995); Palitz v. Zoning Bd. of Appeals of Tisbury, 470 Mass. 795, 801-03 (2015).

In 1994, Concord also obtained variances from Sections 6.7.5, 6.7.6, and 6.7.7 regarding landscaping requirements around the perimeter and parking areas on the project site. The Board of Appeals decision granting the variance in 1994 noted that “[t]he site is in the midst of an existing woodland. The specific requirements for landscaping are not appropriate to this location.” The current proposal relying on distributed energy units does not require the clearing associated with the original solar PV array configurations. Thus, the site will remain “in the midst of an existing woodland,” and the prior variances regarding landscaping requirements are applicable and valid for this proposal.

In the 1994 design, the facility had three (3) parking spaces. The current proposed plan has a total of five (5) parking spaces. Section 6.7.6. of the bylaw imposes perimeter landscaping requirements on parking lots with more than five (5) spaces. Therefore, the project does not have to meet the additional landscaping requirements under Section 6.7.6.

D. Section 10.3.5 – Special Permit Criteria.

For the use special permit required under Section 3.4.7 of the Zoning Bylaw, Concord is required to meet the Special Permit Criteria in Section 10. In particular, the Special Permit Granting Authority must make the “Mandatory Findings” in Section 10.3.5. The “Mandatory Findings include:

- 10.3.5.1 is consistent with the Master Plan;
- 10.3.5.2 is in harmony with the purpose and intent of this Bylaw;
- 10.3.5.3 will not be detrimental or injurious to the neighborhood in which it is to take place;
- 10.3.5.4 is appropriate for the site in question; and
- 10.3.5.5 complies with all applicable requirements of this Bylaw.

a. Section 10.3.5.1 – Is Consistent with the Master Plan

In general, the project is in keeping with the current Acton 2020 Master Plan. Much of the language in the Master Plan regarding public drinking water supplies are directed at the facilities and infrastructure owned by Acton, rather than resources controlled by Concord within Acton, but the Master Plan recognizes Nagog Pond as a natural resource within the town that should be preserved. The new WTP will increase reliance on Nagog as a source of public water supply, which will in turn promote proper care and preservation of this resource. The WTP will provide clean, safe, and reliable source of drinking water and fire protection to both residential and commercial customers in Concord and Acton (along a large corridor of Route 2A).

b. Section 10.3.5.2 – Is in harmony with the purpose and intent of this Bylaw.

The Acton Zoning Bylaw contains a broad statement of purpose:

The purpose of this Bylaw is to implement the zoning powers granted to the Town of Acton under the Constitution and Statutes of the Commonwealth and includes, but is not limited to, the following objectives: to lessen congestion in the streets; to conserve health; to secure safety from fire, flood, panic and other dangers; to provide adequate light and air; to prevent overcrowding of land; to avoid undue concentration of population; to encourage housing for persons of all income levels; to facilitate the adequate provision of transportation, drainage, sewage disposal, schools, parks, open space and other public requirements; to protect and enhance the quality and quantity of Acton's surface and groundwater resources; to conserve the value of land and buildings, including conservation of natural resources and the prevention of blight and pollution of the environment; to preserve and increase amenities; and to preserve and enhance the development of the natural, scenic and aesthetic qualities of the community.

The project satisfies the purpose of the bylaw. To the extent abutters and members of the Acton community were concerned about the loss of trees to accommodate the solar PV array as a loss of natural resources or of the natural, scenic and aesthetic qualities of the community around Nagog Pond, the proposed alternative to incorporate distributed energy units to power the new

WTP will be located essentially within the footprint of the existing treatment facility addresses those concerns. As mentioned above, the surface water supply will provide benefits to both Concord and Acton. In particular, Nagog pond is a source of drinking water and fire protection to both residential and commercial customers along the Route 2A corridor in Acton. In all other respects, the project is designed to preserve and utilize the important natural resource of Nagog Pond within Acton. To that end, the project is very much in keeping with the purpose of the zoning bylaw.

c. Section 10.3.5.3 – Will not be detrimental or injurious to the neighborhood.

The WTP will not be detrimental or injurious to the neighborhood. This project will provide needed improvements to bring the facility into compliance with state and federal drinking water standards. This is a logical and anticipated process that must occur periodically at water treatment facilities. Again, to the extent members of the community expressed concern about the scope of clearing required to accommodate the solar PV array originally proposed for the project, the revised approach avoids a solar installation and preserves the woodland that provides a buffer between the treatment facility and the neighboring community that was recently constructed on Skyline Drive. The project also provides sufficient mitigation of any potential noise associated with the distributed energy system and will not result in an exceedance of the requirements of 310 CMR 7.10 or the MassDEP Noise Policy.

d. Section 10.3.5.4 – Is appropriate for the site in question.

Parcel C4-14 was acquired by Concord in 1909 for the purpose of constructing and maintaining a public water supply system. Such systems are appropriately located proximate to the public water supply source. As part of the public water supply system, this specific area has accommodated a water treatment facility for over twenty years. This project is designed to upgrade the facility, equipment, and processes to ensure that the Town of Concord complies with all state and federal drinking water requirements.

E. SITE PLAN SPECIAL PERMIT

The project also requires a Site Plan Special Permit under Section 10.4. In addition to the criteria from 10.3 that are incorporated in the Site Plan Special Permit process, Section 10.4.3 sets out the Site Design Standards for Site Plan Special Permits. Section 10.4.3 states that

The purpose of the following site design standards is to ensure that adequate consideration will be given to the natural resources and characteristics of a site, to its topographic, hydrologic and geologic conditions, to public convenience and safety and to the suitability of a proposed USE on a site. Before the granting of any Site Plan Special Permit, the Board of Selectmen shall assure that each site plan submitted for its review shall comply in full with the following site design standards.

a. Section 10.4.3.1 – Storm Water Runoff.

Pursuant to this section, “the peak rate of storm water runoff from the development site shall not exceed the rate exiting prior to the new construction based on a 10-year design storm...” The submission by Environmental Partners demonstrates that there is no increase in the peak runoff rate from the 10-year design storm for this project. The storm water runoff calculations prepared by Concord’s consulting engineers demonstrates that the project complied with the requirements even with the clearing of vegetation required for the original solar PV array. With the project revision to rely on distributed energy units and to maintain the woodland vegetation, the storm water runoff is going to be maintained on the site and will not exceed the pre-construction runoff rate.

b. Section 10.4.3.2 – Outdoor Lighting.

As noted above, Concord requested a waiver from the Outdoor Lighting Plan submission requirements under Section 3.9.10 of the Site Plan Special Permit Rules and Regulation. Even so, the project complies with the requirements of this Section and Section 10.6, because the outdoor lighting at the WTP building will be pointed downward to minimize neighborhood glare and will incorporate fixtures with cutoff visors to prevent light spillage.

c. Section 10.4.3.3 – Common Driveway.

Though C4-14 and C4-32 are separate lots, for zoning purposes they are considered one merged lot. Thus, the WTP access road does not serve two separate lots; it serves one merged lot. Even if the access road was deemed to be a “Common Driveway” under this section, the Concord proposal would satisfy the site plan special permit criteria. As discussed above, the access road is 20 feet wide and not 24 feet wide, as specified in this section. The 1994 Variance from the road width requirement is also valid for this section. The “Common Driveway” on the property complies with the other aspects of this Section, including, but not limited to, providing adequate open space on the property.

d. Section 10.4.3.4 – Sidewalks.

The WTP property does not have frontage on a public road and therefore is not required to have a sidewalk. Given the importance of protecting public drinking water supply, the property does not have a sidewalk along the access road. To maintain the security of the facility, the general public is not invited to the property and trespassing is not tolerated.

e. Section 10.4.3.5 – Landscaping on Open Space.

This section concerns landscaping on open space that should be “designed to enhance the visual impact of the use upon the lot and adjacent property.” With the distributed energy alternative, the project will retain the existing woodland vegetation that provides a buffer between the treatment facility and neighboring properties. The new WTP is located essentially within the footprint of the existing facility, which maximizes the amount of open space retained

by the project. To the extent the proposed facility is slightly larger than the original treatment facility, it is designed to be located on areas where ledge was already removed in the construction process for the original building. In this manner, the new WTP does not require additional clearing to construct the new facility.

The layout and design of the facility with the distributed energy alternative will ensure an adequate buffer between properties, minimize the visual effect of the bulk and height of buildings, structures, parking areas and lights, and minimize the impact of the use of the property for water supply purposes.

f. Section 10.4.3.8 – Maximum Floor Net Area.

This section of the site plan special permit criteria states that the maximum net floor area shall not exceed the product of the developable site area and the maximum floor ratio is not applicable for this project. There is no specific maximum or minimum floor area ration in the R-8 or R-10/8 zoning district. Even if it did apply, the total developable site area on Concord's 60 acre parcel provides sufficient space for the proposed 9,338 square foot building.

g. Section 10.4.5 – Use Consistent with Site Plan.

Section 10.4.5 incorporates very similar requirements from the Special Permit criteria in Section 10.3.5 discussed above, but the section includes some additional criteria also.

i. Section 10.4.5.1 – Is Consistent with the Master Plan.

As discussed in Section 10.3.5.1 above, the public drinking water supply treatment facility is consistent with the Master Plan.

ii. Section 10.4.5.2 – Protects the Town against seriously detrimental or offensive uses on the site and against adverse effects on the natural environment.

The design of the new WTP will protect the neighborhood and the Town against seriously detrimental or offensive uses on the site and against adverse effects on the natural environment. The new WTP will be located in the same footprint as the current facility to minimize impacts. The decision to utilize distributed energy units as opposed to the installation of a solar PV array will protect the woodlands on the site.

iii. Section 10.4.5.3 – Provides for convenient and safe vehicular and pedestrian movement.

The layout of the access road and parking areas provides for convenient and safe vehicular movement on the site. The egress from the access road is appropriate and provides for convenient and safe vehicular and pedestrian traffic circulation, including emergency vehicles, on or adjoining the site.

The WTP is not in a public recreation area. The purpose of the facility is to provide safe public drinking water supply. To that end, the proposed enhancements to the facility include some fencing to outline and protect Nagog Pond generally, and the intake area, specifically. These measures are deliberate steps to promote better safety at public water supply resources. To the extent these improvements curtail pedestrian access, it is a necessary change as the requirements to restrict access, and maintain secure public water supply areas increase. Water supply security is a paramount concern to EPA and Homeland Security.

iv. Section 10.4.5.4 – Provides an adequate arrangement of parking and loading spaces in relation to the proposed use of the premises.

The layout of the parking areas provides for convenient and safe vehicular movement on the site. The WTP plan provides five parking spaces and adequate room to receive the anticipated traffic. Daily vehicle trips associated with the operations and maintenance of the WTP are expected to only slightly increase from the current utilization. Water treatment plants of a similar size to the WTP are often staffed by approximately three operators that would generate approximately six vehicle trips per day. Routine traffic as a result of operations activities, including chemical deliveries and residuals management, will slightly increase the average daily trips. Seven chemical deliveries per month are anticipated with no more than two deliveries per day, and residuals management may occur twice per week. Conservatively, a total of 10 to 15 trip ends per day are anticipated for the water treatment plant with an occasional increase for additional maintenance. Thus, the site plan provides adequate parking and loading that is consistent with a public drinking water supply use.

v. Section 10.4.5.5 – Provides adequate methods of disposal of refuse or other waste resulting from the use on site.

The proposed Nagog Pond WTP is being designed as a zero discharge facility. The Town's objective for the facility is to recycle all wastes, with the exception of sanitary wastes. The proposed WTP will include a small (20 gallons per day) disposal system for sanitary wastes (septic tank). Residuals generated from treating the water will be dewatered on-site, and the solids will be transported off-site and blended with other materials to create a compost material. The WTP will also include suitable secondary containment and safety measures for the storage of water treatment chemicals in accordance with local and state requirements.

vi. Section 10.4.5.6 – Use will not derogate from the intent of this Bylaw to limit the adverse effects of the use and development of land on the surface and groundwater resources of the Town of Acton.

As discussed above, the proposal complies with the Special Permit requirements in Section 10.3. Pursuant to Section 10.4.5.6, any project that complies with Section 10.3 is deemed to have satisfied the requirements of this section.

vii. Section 10.4.5.7 – Complies with all applicable requirements of this Bylaw.

As with the compliance with the Special Permit criteria in Section 10.3, the WTP project complies with all applicable requirements of the Acton Zoning Bylaw.

Therefore, the Town of Concord meets the requirements of Sections 3.4.7 and 10.4 of the Acton Zoning Bylaw for a use special permit and a site plan special permit for the Nagog Pond WTP. Accordingly, the Town of Concord requests the Board of Selectmen to issue the Special Permits.