

COUNTY OF LOUDOUN
DEPARTMENT OF PLANNING
MEMORANDUM

DATE: April 14, 2010

TO: Loudoun County Planning Commission

FROM: Pat Giglio, Project Manager

SUBJECT: April 21, 2010 Planning Commission Work Session –
CMPT 2009-0002, SPEX 2009-0029– Potomac Radio

BACKGROUND

Potomac Radio, LLC, of Falls Church, Virginia has submitted an application for a Commission Permit and Special Exception approval to permit a “public utility, communications and transmission” (AM Radio Transmitter) use in the PD-IP (Planned Development-Industrial Park) zoning district. The property is located within the Route 28 Taxing District and within the AI (Airport Impact) Overlay District one (1) mile buffer of the Ldn 60 aircraft noise contour. This application is subject to the Revised 1972 Zoning Ordinance and the public utility use requires Commission Permit approval in accordance with Section 905. The towers and associated equipment are located within the floodplain overlay district (FOD) and are permitted by Special Exception approval pursuant to Section 740.7(4). The 340.66 acre property is located in the northeast quadrant of the intersection of Loudoun County Parkway (Route 607) and future Gloucester Parkway on property owned by Loudoun Water and operated as the Broad Run Water Reclamation Facility. The property is identified as 44771 Loudoun Water Way, Ashburn, Virginia. The proposed 7.5 acre subject site (lease area) is located in the northeast corner of the property within the floodplain of the Broad Run. The area is governed by the policies of the Revised General Plan (Suburban Policy Area (Ashburn Community)), the Dulles North Area Management Plan, and the Strategic Land Use Plan for Telecommunications Facilities (Telecommunications Plan) which designate this area for Keynote Employment uses.

PLANNING COMMISSION PUBLIC HEARING

The Planning Commission held a public hearing on this application on March 24, 2010; two people from the public spoke. One speaker had concerns with the overall visual impact of the three (3) proposed 195-foot self supporting lattice towers on the surrounding area and noted that the proposed construction could lower the value of nearby commercial properties and homes. Both speakers also had concerns with the location of the proposed AM Radio Transmitter within the floodplain of the Broad Run and the environmental impact of the proposed construction. Specific concerns were raised regarding the loss of existing plant and wildlife habitat, but more specifically the potential impact of the proposed construction on the Heron Rookery located on the adjacent property to the east.

The Commission in their discussions with staff and the applicant raised similar concerns regarding the overall visual impact of the proposed structures, how the subject site was selected and why the proposed structures could not be located outside the floodplain, what environmental impacts were associated with the proposed construction within the floodplain; what were the potential impacts of the proposed construction on the nearby heron rookery; how does the proposed Planting Plan improve and/or enhance the existing environmental features on the subject site and what precautions are being proposed to control siltation and erosion during the construction process. The Commission asked that at a future work session the questions raised at the Public Hearing be addressed and that further consultation with the Virginia Department of Game and Inland Fisheries (VDGIF) be conducted to address issues pertaining to the nearby Heron Rookery.

The Planning Commission voted 9-0 to forward the application to a work session for further discussion.

UPDATES

Planning staff following the March 24, 2010, Planning Commission Public Hearing developed a series of questions synthesizing the issues raised at the meeting which were distributed to the Virginia Department of Game and Inland Fisheries (VDGIF) and the applicant. Planning staff through discussions with VDGIF staff and the applicant's environmental consultant were able to clarify issues pertaining to the nearby Heron Rookery and confirmed that adequate protection of the rookery could be achieved through time of year restrictions limiting activities outside the nesting period. The VDGIF's and the applicant's responses are included with the attachments (Attachments 3 & 4) along with further discussion below.

In response to a request for additional photo-simulations to assess the potential visual impact of the proposed construction on surrounding properties the applicant conducted a balloon test on Tuesday April 6, 2010. The applicant notified the Planning Commission, adjacent properties owners and Home Owners Associations a day prior to the balloon test so that interested parties could be in attendance. The applicant has provided updated photo-simulations which are included with the attachments (Attachment 4).

DISCUSSION

The site is governed under the policies of the Revised General Plan (Plan) and is located in the Ashburn Community of the Suburban Policy Area in an area planned for Keynote Employment uses. The Plan describes Keynote Employment areas as large-scale regional office developments, including office parks, research and development, and corporate headquarters supported by a limited percentage of ancillary employee and/or office supportive uses. The proposed AM Radio Transmitter is not consistent with the land use mix or type of uses envisioned for Keynote Employment areas, as defined by the Revised General Plan.

The proposed AM Radio Transmitter is also located within the floodplain of Broad Run and requires ground disturbing activities and the removal of approximately 2 acres of existing forest cover for construction. The Revised General Plan permits only a very limited number of uses within the floodplain, including passive and active recreation, road crossings and

bridges, utility corridors, pervious paths and trails, and agricultural activities. The proposed AM Radio Transmitter is not one of the types of uses envisioned by the Plan to be located within the stream corridor and more specifically the major floodplain of Broad Run.

Plan policies do not support the location of the proposed AM Radio Transmitter within a Keynote Employment Area or the within floodplain of the Broad Run. Staff cannot support the applications and recommends denial of these applications due to conflicts with the land use and environmental policies of the Revised General Plan. Staff has outlined the issues raised at the March 24, 2010 Planning Commission Public Hearing below for discussion.

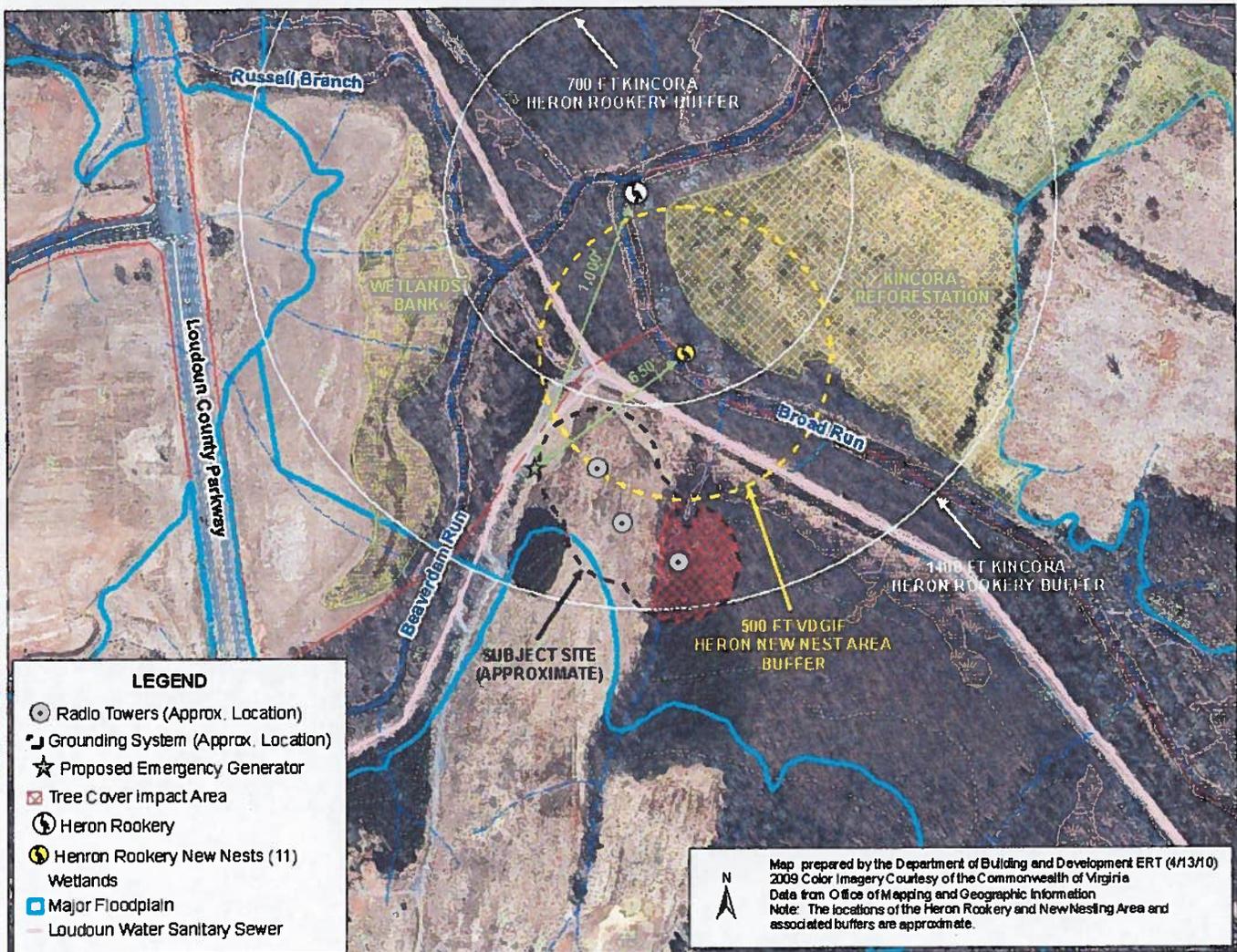
Visual Impact

The applicant at the request of the Planning Commission conducted a balloon test on Tuesday April 6, 2010. Included in the attachments are photo-simulation from various vantage points including the Kincora property located to the east and One Loudoun located to the northwest (Attachment 4). While conducting a site visit during the balloon test, staff noted that views of the three (3) proposed 195' lattice towers will be most pronounced from properties to the west where the relatively flat terrain and lack of trees will silhouette the structures on the horizon. Additional views of the structures from University Center and the Route 7 Corridor as far west as the intersection at Ashburn Village Boulevard (Route 772) where identified. Views from the east toward the subject site and along Route 28 were screened by existing forest cover; however future development and the elimination of these forested areas may create new unobstructed sight lines whereby the proposed lattice towers will be visible.

Heron Rookery

Planning staff through consultation with VDGIF staff and the applicant's environmental consultant have further evaluated the potential impacts of the proposed construction on the nearby Heron Rookery and based on this information their appears to be no effect on the rookery provided that the proposed design of the structures and conditions of approval as currently presented are adhered too. Specifically, the commitment to time of year restrictions, to ensure that no construction activities and/or significant noise impacts occur during the heron nesting period, defined as March 15 through July 31, are critical to ensuring the viability of the rookery. Studies indicate that the Great Blue Heron is a highly adaptable bird, and based on the experience of VDGIF staff the presence of tall structures, such as the proposed radio towers should not have a negative impact on the rookery. The nearest proposed radio tower is located approximately 500' northeast of the rookery, adjacent to an area defined by VDGIF as a "non-disturbance buffer". Within the 500' no disturbance buffer VDGIF recommends that all existing vegetation and forest cover be retained to provide line of sight protection as well as a physical barrier from human disturbance for the rookery, also within this buffer area time of year restrictions which correspond with the heron nesting period are to be imposed. The applicant does not propose the removal of any trees in this area, but instead has proposed a Planting Plan comprised of loblolly pines, shrubs and grasses to screen the proposed radio towers and mitigate the potential environmental impacts associated with the proposed construction within the floodplain of the Broad Run. The applicant has committed to time of year restrictions which would preclude any

construction activities during the nesting period as defined by VDGIF and has also committed to the construction of self-supporting lattice towers to minimize hazards to birds in flight. Should the application be approved with conditions, no adverse effects to the Heron Rookery are anticipated as outlined in the correspondence with VDGIF and the applicant's environmental consultant (Attachments 3 & 4).



Noise

In response to questions raised at the Public Hearing the applicant has provided additional information pertaining to estimated noise sound levels associated with a proposed auxiliary generator to be used for emergencies (Attachment 4). The applicant's research indicates that the sound levels associated with the generator will be 47 dba, which is the equivalent to normal conversation when measured at the nearby Heron Rookery which is located approximately 650' feet to the northeast. VDGIF staff has substantiated this data, and does not believe that noise from the auxiliary generator will adversely impact the Heron Rookery. Additional sound attenuation can also be anticipated as trees associated with the Planting Plan mature, should the application be approved.

Planting Plan

The applicant as part of the Planting Plan has proposed the planting of approximately three acres of loblolly pine seedlings on the periphery of site between the radials of the buried ground system for the radio towers (Attachment 4). The loblolly pines were selected for their ability to tolerate the wetter conditions of the site, which is designated as floodplain, and for their ability to tolerate deer browse. The loblolly pine, unlike other evergreens can regenerate its limbs if eaten by deer, thus increasing its survivability as seedlings. The County's Urban Forester found the proposed Planting Plan and the use of loblolly pine seedlings to be appropriate on the subject site, but had recommended the use of larger caliper three-gallon containerized evergreens and deciduous trees to increase survivability and provide a greater mix of species which is more representative of the existing mature 2-acre mixed bottomland and hardwood forest being proposed for removal on the southern portion of the subject site. VDGIF has also confirmed that a mix of evergreen and hardwood species is desirable and best for wildlife habitat on the subject site. However, due to the cost associated with the purchase and planting of containerized trees the applicant has proposed the planting of loblolly pine seedlings at a density of 800 trees per acre on the subject site. In lieu of containerized trees the County's Urban Forester found the planting of loblolly pine seedlings to be acceptable given the high probability of deer browse on the property.

Erosion and Sediment Controls

In response to questions raised at the Public Hearing pertaining to the implementation of erosion and sediment controls during the construction process, the applicant has committed to a work plan which is designed to minimize impacts (Attachment 4). The applicant has proposed clear cutting the 2-acres of existing forest cover in the southern portion of the site and grinding and chipping the tree stumps and vegetation in place to avoid further ground disturbance as well as create an organic layer of material to reduce siltation and support plant growth. The applicant also proposes to maintain the channel of the intermittent stream/drainage feature located on the southern portion of the site. The applicant will use methods to minimize soil compaction created by heavy equipment during the construction of the tower bases and during the installation of the proposed radials of the buried ground system for the radio towers to protect the integrity of the floodplain. The applicant will use a prefabricated transmitter building and preassemble the lattice towers for the radio antennas outside the floodplain prior to craning them into position. All construction activities on the subject site will be coordinated with the County's Urban Forester and Department of Building and Development staff to ensure that appropriate erosion and sediment controls and techniques are implemented. While staff acknowledges and appreciates the applicant's commitment to the enhancement of the stream corridor and their plan to mitigate the potential environmental impacts associated with the proposed construction within the major floodplain of the Broad Run, the policies of the Revised General Plan do not support the construction of this type of use within the floodplain.

STAFF RECOMMENDATIONS

Staff recommends denial of these applications due to conflicts with the land use and environmental policies of the Revised General Plan.

SUGGESTED MOTIONS

1a. I move that the Planning Commission deny CMPT 2009-0002, Potomac Radio, based on the attached Findings.

And

1b. I move that the Planning Commission forward SPEX 2008-0029, Potomac Radio, to the Board of Supervisors with a recommendation for denial based on the attached Findings.

OR,

2a. I move that the Planning Commission approve CMPT 2009-0002, Potomac Radio, subject to the plat dated February, 2009, revised through March 2, 2010, prepared by Patton Harris Rust & Associates, pc, based on the following Findings: _____

AND,

2b. I move that the Planning Commission forward SPEX 2009-0029, Potomac Radio, to the Board of Supervisors with a recommendation of approval, subject to the Conditions of Approval dated March 23, 2010 and based on the following Findings: _____

OR

3. I move an alternate motion.

FINDINGS FOR DENIAL

Commission Permit

1. The proposed AM Radio Transmitter is not consistent with the land use mix or type of uses envisioned for Keynote Employment Areas, as defined in the Revised General Plan. The policies of the Revised General Plan do not support the location of the proposed AM Radio Transmitter within a Keynote Employment Area.
2. The policies of the Revised General Plan permit only a limited number of uses within the floodplain, including passive and active recreation, road crossings and bridges, utility corridors, pervious paths and trails, and agricultural activities. The proposed AM Radio Transmitter is not one of the types of uses envisioned by the Plan to be located within the stream corridor and more specifically the major floodplain of Broad Run. The environmental policies of the Revised General Plan do not support the location of the proposed AM Radio Transmitter within the floodplain.

Special Exception

1. The policies of the Revised General Plan permit only a limited number of uses within the floodplain, including passive and active recreation, road crossings and bridges, utility corridors, pervious paths and trails, and agricultural activities. The proposed AM Radio Transmitter is not one of the types of uses envisioned by the Plan to be located within the stream corridor and more specifically the major floodplain of Broad Run. The environmental policies of the Revised General Plan do not support the location of the proposed AM Radio Transmitter within the floodplain.
2. The location of the proposed AM Radio Transmitter within the major floodplain of Broad Run does not comply with Sections 740.8(6) Standards for a Special Exception of the 1972 Zoning Ordinance, which states that when considering a proposed special exception use within the floodplain, the proposed use shall be "in harmony with the comprehensive plan". The environmental policies of the Revised General Plan do not support the location of the proposed AM Radio Transmitter within the floodplain. The application does not comply with the requirements of the 1972 Zoning Ordinance.

ATTACHMENTS

1. Vicinity Map
2. Conditions of Approval, dated March 23, 2010.
3. Correspondence with Virginia Department of Game and Inland Fisheries (VDGIF).
4. Applicant Submission: Response to March 24, 2010 Planning Commission Public Hearing Questions.

VICINITY MAP



Directions:

From Leesburg, take Route 7 east to Loudoun County Parkway. Follow Loudoun County Parkway south. Turn left into the first entrance onto the Loudoun Water Campus. Turn left on the first gravel road, proceed through the gate and follow the road down the hill to the subject site located in the northeast corner of the property west of the existing sewer corridor.

ATTACHMENT 1

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SPEX 2009-0029 Potomac Radio
DRAFT CONDITIONS OF APPROVAL – March 23, 2010

Should the Planning Commission wish to approve the application, staff recommends the following conditions of approval:

1. **Substantial Conformance** - This Special Exception to permit development of AM radio towers as a public utility within the floodplain shall be developed in substantial conformance with Sheets 1 of 4 and 3 of 4 (the "Special Exception Plat") of the plan set entitled "Potomac Radio, Special Exception Plat/ Commission Permit Application" dated February 2009, revised through March 2, 2010, prepared by Patton Harris Rust & Associates, PC (the "Plans"), and incorporated herein by reference and the applicable provisions of the Loudoun County Zoning Ordinance. Approval of this application for Tax Map Number /80///4////A2/ (PIN# 041-37-4022) (the "Property") shall not relieve the Applicant or the owners of the Property or any Lessee from the obligation to comply with and conform to any other Zoning Ordinance, Codified Ordinance, or applicable regulatory requirement.
2. **Riparian Planting Plan** - The Applicant shall install all the plant materials and trees in the amounts and sizes specified, at the general locations depicted on, and of a character consistent with, the "Planting Plan", dated December 20, 2009 prepared by blueskies environmental associates, inc. of Richmond, Virginia, and shown on Sheet 4 of 4 of the Plans (the "Planting Plan"). Prior to approval of the first site plan for the Special Exception use, the Applicant shall post a bond with the County in an amount and with surety satisfactory to the County sufficient to cover the cost of implementing the Planting Plan. The Applicant shall ensure that a minimum of eighty (80%) percent of the initial planting is established after two growing seasons through the conduct of an inspection by the Applicant and the County Urban Forester. The bond shall be released following confirmation that a minimum of eighty (80%) percent of the initial planting is established after two growing seasons. Should it be determined that a minimum of eighty (80%) percent survival with uniform distribution is not achieved, a onetime planting to bring the project to full stocking consistent with, the "Planting Plan" shall be conducted by the Applicant and the bond released after compliance herewith has been confirmed by the Zoning Administrator.
3. **Heron Rookery** – No land disturbing or construction activities shall be performed or permitted within the area of the Special Exception during the heron nesting season defined as from February 15 through July 31 of each year. The on-site auxiliary generator may be used only in emergency situations during the said heron nesting season when electrical power has been interrupted. Periodic testing of the on-site auxiliary generator shall not be conducted during the heron nesting season to avoid potential noise impacts to the rookery.

ATTACHMENT 2

4. **Exterior Lighting** – No permanent exterior lighting shall be permitted within the area of the Special Exception unless directed by the County or unless otherwise required by the Federal Communications Commission or the Federal Aviation Administration, State or Federal authorities.
5. **Noise** - The applicant shall incorporate noise attenuation measures in the design and operation of the facility to ensure that noise levels emanating from equipment on the Property shall comply with a maximum of 75 dBA at the Property lines.
6. **Fuel Tank** - The Applicant shall use non-diesel fuel to power the on-site auxiliary generator. Prior to site plan approval, the Applicant shall coordinate with the County on the selection of the fuel tank to prevent leakage and measures to secure it in the event of flooding. The applicant shall provide fuel spill containment for all fuel storage on the property, and such containment measures shall be detailed on the site plan prior to site plan approval.
7. **Cessation of Use** - The Applicant or its successors shall remove all unused related structures and equipment from the area of the Special Exception, within 90 days of cessation of use or the expiration of the ground lease, whichever occurs first, and restore the site as closely as possible to its natural condition consistent with the Planting Plan.
8. **Advertising**- No commercial advertising shall be permitted on any tower.
9. **Communication Uses**- No antenna, satellite or microwave dish shall be attached to any tower without first obtaining approval of a new Special Exception for such use.

Note: The Applicant has agreed to provide a one-time contribution to the County in the amount of \$1,000.00 for the radio towers, and an additional \$0.10 per square foot of gross floor area of the transmitter building, for volunteer fire and rescue services. The \$1,000.00 contribution will be paid to the County prior to issuance of a building permit for any radio tower. The \$0.10 per square foot of gross floor area of the transmitter building will be paid to the County prior to the issuance of the building permit for the transmitter building. The square footage contribution shall escalate annually from the base year of 1988 and change effectively each January 1st thereafter, based on the Consumer Price Index for all urban consumers (CPI-U), 1982-1984=100 (not seasonally adjusted) as reported by the United States Department of Labor, Bureau of Labor Statistics.

Correspondence with Virginia Department of Game and Inland Fisheries (VDGIF)

ATTACHMENT 3

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Giglio, Patrick

From: Ewing, Amy (DGIF) [Amy.Ewing@dgif.virginia.gov]
Sent: Thursday, April 01, 2010 11:46 AM
To: Giglio, Patrick
Subject: RE: Potomac Radio, PC Questions
Attachments: PC Questions_dgif.docx

Hi Patrick,
Please see our responses in blue in the attached document.

Let me know if you need anything further.

Amy

Amy M. Ewing
Environmental Services Biologist
Virginia Dept. of Game and Inland Fisheries
4010 West Broad Street
Richmond, VA 23230
804-367-2211
amy.ewing@dgif.virginia.gov

From: Giglio, Patrick [mailto:Patrick.Giglio@loudoun.gov]
Sent: Wednesday, March 31, 2010 8:36 AM
To: Ewing, Amy (DGIF)
Subject: Potomac Radio, PC Questions

Amy
Please find attached questions from the Loudoun County Planning Commission (PC) that were raised at their March 24, 2010 Public Hearing for Potomac Radio to be addressed at a future work session on the application. Your assistance and advice in answering these questions pertaining to the Heron Rookery would be gladly appreciated.

Attached is an updated map depicting the 500 feet undisturbed buffer and location of proposed emergency generator. Also I would like to note that as of last week there is now 11 nesting pairs located in the sycamores adjacent to the subject site. Give me a call if I can provide any additional information.

Pat Giglio, Planner III
Loudoun County Department of Planning
703-777-0246 (office)
703-737-8563 (direct)

Potomac Radio

Questions from Planning Commission Public Hearing, Wednesday March 24, 2010

What type of activities can occur in the 500 ft. "do not disturb" area defined by VDGIF in proximity to the Heron Rookery? We recommend that a 500-ft undisturbed, naturally vegetated buffer be maintained on the nest. We recommend no disturbance within this buffer during the nesting season and no alterations to this vegetated buffer at any time. The purpose of the buffer is to provide line of sight protection as well as a physical barrier from human disturbance. In addition, it allows for some expanse of the colony if needed.

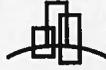
What is the effect of the construction and/or presence of tall structures in proximity to Heron Rookeries based on case studies? Based on the experience of our bird experts, Jeff Cooper and Sergio Harding, we do not anticipate the presence of the radio towers to negatively impact the heronry. They may actually provide additional substrate for the birds to nest on. More impactful than anything is simply increased urbanization in the area.

What effect does noise (ie. emergency generator at 70 decibels) have on the Heron Rookery and what are acceptable levels? We do not believe the noise from the generator will adversely impact the birds. The level of the noise is really rather small (same as a typical vacuum cleaner or TV) and it will be periodic.

What is the life style habit and nesting time frame for Herons? The nesting season for great blue heron is typically February 15 through July 31.

What provides the best riparian buffer on the subject site the existing tree cover or the proposed Planting Plan? With respect to riparian buffers, we typically recommend undisturbed, naturally vegetated riparian buffers of at least 100-feet on both sides of streams and up to 300-ft if the stream is known to support sensitive species. The larger the buffer, the better the protection of the water quality and wildlife habitat. We recommend maintaining mature woody vegetation (trees), not mowed grass or other regularly maintained landscapes along streams and wetlands. In any situation, we recommend the use of native species for all plantings.

What trees species provides the best survivability and growth rates within the floodplain on the subject site and would it be advantageous to add hardwoods into the mix of trees species in addition to the loblollies proposed with the Planting Plan? We cannot speak to tree survivability, you would need to contact someone that performs stream buffer plantings/restoration to speak to that. There are certainly trees that thrive in floodplain environs. In terms of wildlife habitat, a mix of tree species (soft and hardwoods) is best and we typically recommend that native hardwoods which provide hard and soft mast be included in the planting mix.



**WALSH COLUCCI
LUBELEY EMRICH
& WALSH PC**

Kimberlee Welsh Cummings, AICP
Land Use Planner
(571) 209-5773
kcummings@ldn.thelandlawyers.com

April 13, 2010

Via E-Mail Only

Pat Giglio, Planner III
Loudoun County Department of Planning
1 Harrison Street, S.E.
Third Floor
P. O. Box 7000
Leesburg, Virginia 20177-7000

Re: Potomac Radio - SPEX 2009-0029, CMPT 2009-0011

Dear Pat:

Enclosed please find the following documents for the Planning Commission Worksession scheduled for April 21, 2010:

1. Responses by Applicant to the questions from the Planning Commission public hearing held on March 24, 2010, including the Noise Report;
2. Applicant Proposed Construction mitigation measures;
3. Additional photosimulations
 - a. View across from Elementary School (One Loudoun Center);
 - b. View from Ashby Ponds;
 - c. View from the Heron Rookery;
 - d. View from Kincora; and
 - e. View from just south of the site, including Planting Plan trees of approximately 5 years maturity.
4. Conceptual Landscape Plan and Planting Plan; and
5. Benefits of WAGE Radio and Importance of AM Radio.

PHONE 703 737 3633 ■ FAX 703 737 3632 ■ WWW.THELANDLAWYERS.COM
1 E. MARKET ST

ARLINGTON OFFICE 7

ATTACHMENT 4

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A-9

Several questions arose from individual meetings with some of the Planning Commissioners; therefore, the Benefits of WAGE Radio and the Importance of AM Radio documents are enclosed.

As discussed on the telephone today, 15 color copies of the above referenced photosimulations will be delivered to you today. Please let me know if you have any questions, or need additional information.

Thank you for your assistance with these applications.

Sincerely,

WALSH, COLUCCI, LUBELEY, EMRICH &
WALSH, P.C.

Kimberlee Welsh Cummings

Kimberlee Welsh Cummings, AICP
Land Use Planner

Enclosures

cc: James M. Weitzman, President, Potomac Radio, LLC
Steven A. Smith, President/Project Manager, Strategic Infrastructure Protection
Technologies LLC/Potomac Radio WAGE
Garrison C. Cavell, President, Cavell, Mertz & Associates, Inc.
Michael D. Rhodes P.E., Cavell, Mertz & Associates, Inc.
Sandra H. Williams, President, blueskies environmental associates, inc.
Mark W. Thomas, Director of Planning & Landscape Architecture, Patton Harris
Rust & Associates, PC
J. Randall Minchew, Managing Shareholder, Leesburg Office, Walsh, Colucci,
Lubeley, Emrich & Walsh, P.C.

**Potomac Radio – SPEX 2009-0029 & CMPT 2009-0002
Responses by Applicant April 9, 2010**

Questions from Planning Commission Public Hearing, Wednesday March 24, 2010

What type of activities can occur in the 500 ft. “do not disturb” area defined by VDGIF in proximity to the Heron Rookery?

It is the Applicant's understanding that the VDGIF recommends that a 500 foot undisturbed, naturally vegetated buffer be maintained with no disturbance during the nesting season. The Applicant has agreed to a condition of approval limit construction after the nesting season.

What is the effect of the construction and/or presence of tall structures in proximity to Heron Rookeries based on case studies?

Sergio Harding, Nongame Bird Conservation Biologist with the Virginia Department of Game and Inland Fisheries, replied that Ardea herodias (great blue heron) only utilize the rookery during the documented nesting periods (March – July). As soon as the young fledge, nesting areas are abandoned. Construction activity outside the time of year (TOY) restriction will have no effect on the rookery. Tall structures have been documented near rookeries and throughout the birds' range. The closest comparison for this activity is the high tension power line towers nearby. They are much larger, but are an open grid style. Mr. Harding commented that these birds are more adaptable in urban portions of their range and have been documented using man-made structures for roosting and nesting. These birds are increasing in population throughout their range. The Potomac Radio project is to be constructed completely outside the nesting period for the species and is not considered an adverse impact.

What effect does noise have on the Heron Rookery and what are acceptable levels?

The noise from the generator onsite will only be present when the power is out. The sound created is a hum and Mr. Harding indicated that these birds are disturbed by loud, sharp sounds. He indicated it was highly unlikely that the generator would have any effect on the birds at any time of year. Enclosed is a Noise Report that states the sound level expected at 500 feet (Heron Rookery) from the generator is approximately 47 dBA. This noise level is less than that of a normal conversation.

What is the life style habit and nesting time frame for Herons?

According to Robert W. Butler (1992) in The Birds of North America online at the Cornell Lab of Ornithology the great blue heron is one of the most widespread and adaptable wading birds in North America. The species' nest in colonies often located on islands or in wooded swamps, isolated locations that discourage predation by snakes and

mammals. Although this species is primarily a fish-eater, feeding mostly in slow moving or calm freshwater, it also stalks upland fields for rodents, especially in winter.

This species has been documented nesting in trees, bushes, on the ground and on artificial structures near water. These birds nest as single pairs mostly in colonies. The mean distance to principal feeding sites is 2.3 to 6.5 km (Butler, 1991). Nests are located mainly in trees, 30 meters or more above the ground, lowland swamps, upland forests, islands and riparian woodlands. They have also been documented on shrubs (Vermeer, 1969), sagebrush (Blus et al. 1980), mangroves, duck blinds, channel markers (Blus et al. 1980) and artificial nest platforms (Sandilands 1980). They may also nest with other waterbirds, even hawks, owls and vultures (Simpson 1987). These birds exhibit weak nest site fidelity and may choose another nesting site each year. Eggs incubate for 25-29 days and both males and females roll the eggs approximately every two hours. After hatching, chicks leave the nest in approximately 81 days. Both parents feed the chicks and fledglings return to be fed by the adults for approximately 21 days.

Nests and colonies may be abandoned with increased visits by humans (Drapeau, et al. 1984) and with road building. Colonies are probably dynamic in areas of high disturbance with individuals and entire colonies relocating between years. Most studies recommend a buffer zone, in which no human activity should take place, from the colonies during courtship and nesting. Distances vary from 200-300 meters.

Great blue herons roost alone or in flocks on the ground, in trees, and on man-made objects near feeding grounds during the day. They sleep at night in trees with dense foliage.

What provides the best riparian buffer on the subject site the existing tree cover or the proposed Planting Plan?

*The existing cover on the site is predominantly grasses and a small grove of cedar with limited understory growth southwest of the site. A forested area to the east of the site is dominated by a mix of oaks, sweet gum, maple and cedar. No specimen trees were identified onsite. A few sedges and some cedars have begun to move into the site. The Planting Plan was designed to add density and a diverse array of meadow plants, a scrub/shrub transition and the forested area. The meadow and shrub community provides a transition to the tree canopy and was selected to provide habitat and food sources for songbirds, insects and small mammals. *Pinus taeda* (Loblolly pine) was selected in coordination with the Loudoun County Urban Forester to withstand the wetter conditions and heavy deer browsing on the site.*

What trees species provides the best survivability and growth rates within the floodplain on the subject site and would it be advantageous to add hardwoods into the mix of trees species proposed with the Planting Plan?

*While a number of tree species would tolerate the wetter conditions of the floodplain, the added pressure of the white-tailed deer on the site has narrowed the possible list substantially. Hardwood trees would need to be of a substantial size to withstand the challenges on the site. Additionally, a 1994 study by Brian Watts and Julie Bradshaw in the periodical, Colonial Waterbirds, documented that great blue heron, *Ardea herodias* nest primarily in forested wetlands and mature pine stands (primarily *Pinus taeda* (Loblolly pine)) near water.*

References:

Butler, Robert W. 1992. Great Blue Heron (*Ardea herodias*), The Birds of North America Online (A. Poole, Ed.). Ithaca: Cornell Lab of Ornithology; Retrieved from the Birds of North America Online: <http://bna.birds.cornell.edu/bna/species/025>

Butler, R. 1991. Habitat selection and time of breeding in the Great Blue Heron (*Ardea herodias*). PhD Thesis. Univ. of Brit. Col. Vancouver.

Vermeer, K. 1969. Great Blue Herons colonies in Alberta. *Can. Field-Nat.* 83:237-242.

Blus, L.J., C.J. Henry, and T.E. Kaiser. 1980. Pollution ecology of breeding Great Blue Herons in the Columbia Basin, Oregon and Washington. *Murrelet* 61:63-71.

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Noise Report

Potomac Radio – SPEX 2009-0029 & CMPT 2009-0002
April 5, 2010

A. Common Noise Sound Levels

<u>Source of Sound</u>	<u>dBA</u>
Nearby Jet Plane, Firecracker	150
Jackhammer	130
Chainsaw	up to 125
Siren	120
Heavy equipment operation	95 to 110
Lawn mower	100
Tractor	90
Busy Traffic	80
Clothes Dryer	70
Sewing Machine	60
Normal Conversation	50
Quiet office	40
Whisper	30
Whisper at 5 feet	20
Rustling leaves	10

B. Potomac Radio Estimated Noise Sound Levels from the emergency generator

The emergency generator will only be used when there is a power outage. Generator suppliers provide sound emissions specifications with their equipment. The specific generator has not yet been selected. However, for purposes of estimating noise that may be produced from the generator when it is being used, the Applicant is basing their information on the Generac Power Systems, Inc. 6.8L Engine (see attached). The generator is designed to achieve a continuous sound level of approximately 74 dBA when measured approximately 23 feet (7 meters) from the generator.

Using the Generac Power Systems, Inc. supplied estimated noise levels and assuming a maximum sound level of 74 dBA at 23 feet from the generator, the sound level is expected to be 47 dBA at 500 feet (Heron Rookery, including new nests)¹. This noise level is less than normal conversation, as stated in the list above.

An additional reduction of 5 dBA per 100 feet of depth can be realized if the area between the generator and the Heron Rookery contains trees and vegetation. The sound level provided above is based upon continuous noise, assumes open space and does not account for trees and vegetation.

¹ Engineeringpage.com noise attenuation by distance.



ENGINEERING page

[Home](#) [Up](#) [Back](#)

NOISE ATTENUATION BY DISTANCE (Point Source)

PROJECT DATA (Optional)

Project	Potomac Radio		
Remarks	noise levels from emergency generator to Heron Rookery		
Your ref	5370.2	Client	Potomac Radio
Identification		Client's ref	

CALCULATION INPUT

Source Noise Levels

Sound Pressure Level (SPL, Lp) at 23 ft from source 74 dB(A)

Transmission path

spherical

Immission Point (listener)

Distance from Source 500 ft

CALCULATION RESULTS

Sound levels

Source Sound Power Level (PWL) 101.9 dB(A)

Attenuation

Attenuation by distance of 152.4 m 54.7

Immission (listener's) point

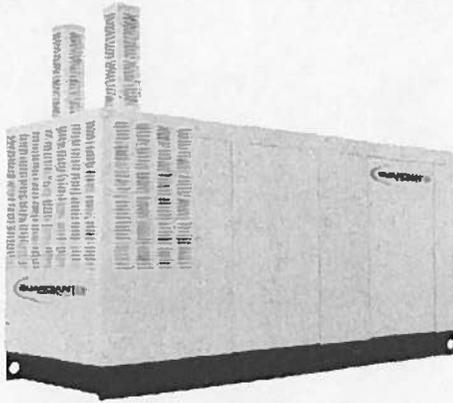
Sound Pressure Level (SPL, Lp) 47.3 dB(A)

[Home](#) www.engineeringpage.com

Standby Power Rating

100 kW 60 Hz

Liquid Cooled Gas Engine Generator Sets



Quiet-Test Mode
For Low Noise Exercise
- 61 dB(A) at 23 feet

GENERAC 6.8L ENGINE

Naturally Aspirated
Gaseous Fueled

UL 2200 Listed



STANDARD EQUIPMENT

- All input connections in one single area
- High coolant temperature shutdown
- Low oil pressure shutdown
- Low coolant level automatic shutdown
- Overspeed automatic shutdown
- Adjustable cranking timer
- Adjustable exercise timer
- Oil drain extension
- Cool flow radiator
- Closed coolant recovery system
- UV/Ozone resistant hoses
- Watertight state of the art electrical connectors
- Mainline circuit breaker
- Oil drain extension to frame rail
- Radiator drain extension
- Battery charge alternator
- 2 Amp static battery charger
- Battery and battery cables
- Battery rack
- Fan and belt guards
- Isochronous governor

FEATURES

- Innovative design and fully prototype tested
- UL2200 Listed
- Solid state frequency compensated digital voltage regulator
- Dynamic and static battery charger
- Sound attenuated acoustically designed enclosure
- Quiet test for low noise level exercise
- Acoustically designed engine cooling system
- High flow low noise factory engineered exhaust system
- State of the art digital control system
- Built-in kW, kVAR and power factor meters
- Watertight electrical connectors
- Rodent proof construction
- High efficiency, low distortion Generac designed alternator
- Vibration isolated from mounting base
- Matching Generac transfer switches engineered and tested to work as a system
- All components easily accessible for maintenance
- Electrostatically applied powder paint
- H-100 microprocessor control panel



APPLICATION & ENGINEERING DATA

100 kW

GENERATOR SPECIFICATIONS

TYPE	Synchronous
ROTOR INSULATION	Class H
STATOR INSULATION	Class H
TOTAL HARMONIC DISTORTION	<3.5%
TELEPHONE INTERFERENCE FACTOR (TIF)	<50
ALTERNATOR OUTPUT LEADS 3 PHASE	4 wire
BEARINGS	Sealed Ball
COUPLING	Gear Drive
LOAD CAPACITY (STANDBY RATING)	100 kW
EXCITATION SYSTEM	Brushless

NOTE: Emergency loading in compliance with NFPA 99, NFPA 110, paragraph 5-13.2.6. Generator rating and performance in accordance with ISO8528-5, BS5514, SAE J1349, ISO3046, and DIN6271 standards.

VOLTAGE REGULATOR

TYPE	Full Digital
SENSING	3 Phase
REGULATION	± 14%
FEATURES	Built into H-100 Control Panel V/F Adjustable Adjustable Voltage and Gain

GENERATOR FEATURES

- Revolving field heavy duty generator
- Quiet drive coupling
- Operating temperature rise 120 °C above a 40 °C ambient
- Insulation is Class H rated at 150 °C rise
- All prototype models have passed three phase short circuit testing

CONTROL PANEL FEATURES

- TWO FOUR LINE LCD DISPLAYS READ:

Voltage (all phases)	Current (all phases)
Power factor	kW
kVAR	Transfer switch status
Engine speed	Low fuel pressure
Run hours	Service reminders
Fault history	Oil pressure
Coolant temperature	Time and date
Low oil pressure shutdown	High coolant temperature shutdown
Overvoltage	Overspeed
Low coolant level	Low coolant level
- INTERNAL FUNCTIONS:
 - 1T function for alternator protection from line to neutral and line to line short circuits
 - Emergency stop
 - Programmable auto crank function
 - 2 wire start for any transfer switch
 - Communicates with the Generac HTS transfer switch
 - Built-in 7 day exerciser
 - Adjustable engine speed or exerciser
 - RS232 port for GenLink® control
 - RS485 port remote communication
 - Canbus addressable
 - Governor controller and voltage regulator are built into the master control board
 - Temperature range -40 °C to 70 °C

Rating definitions - Standby: Applicable for supplying emergency power for the duration of the utility power outage. No overload capability is available for this rating. (All ratings in accordance with ISO8528-5, BS5514, ISO3046, ISO8521 and DIN6271).

ENGINE SPECIFICATIONS

MAKE	Generac
MODEL	V Type
CYLINDERS	10
DISPLACEMENT	9.9 Liter
BORE	3.55
STROKE	4.17
COMPRESSION RATIO	9:1
INTAKE AIR SYSTEM	Naturally Aspirated
VALVE SEATS	Hardened
LIFTER TYPE	Hydraulic

GOVERNOR SPECIFICATIONS

TYPE	Electronic
FREQUENCY REGULATION	± 1%
STEADY STATE REGULATION	± 1/2%
ADJUSTMENTS	
Speed	Yes
Droop	Yes

ENGINE LUBRICATION SYSTEM

OIL PUMP	Gear
OIL FILTER	Full flow cartridge
CRANKCASE CAPACITY	5 Quarts

ENGINE COOLING SYSTEM

TYPE	Closed
WATER PUMP	belt driven
FAN SPEED	1850
FAN DIAMETER	28 inches
FAN MODE	Fuller

FUEL SYSTEM

FUEL TYPE	Natural gas
CARBURETOR	Down Draft
SECONDARY FUEL REGULATOR	Standard
FUEL SHUT OFF SOLENOID	Standard
OPERATING FUEL PRESSURE	6" - 14" H ₂ O

ELECTRICAL SYSTEM

BATTERY CHARGE ALTERNATOR	12V 30 Amp
STATIC BATTERY CHARGER	12V 2 Amp
RECOMMENDED BATTERY	24F 625CCA
SYSTEM VOLTAGE	12 Volts

Noise Report



100 kW

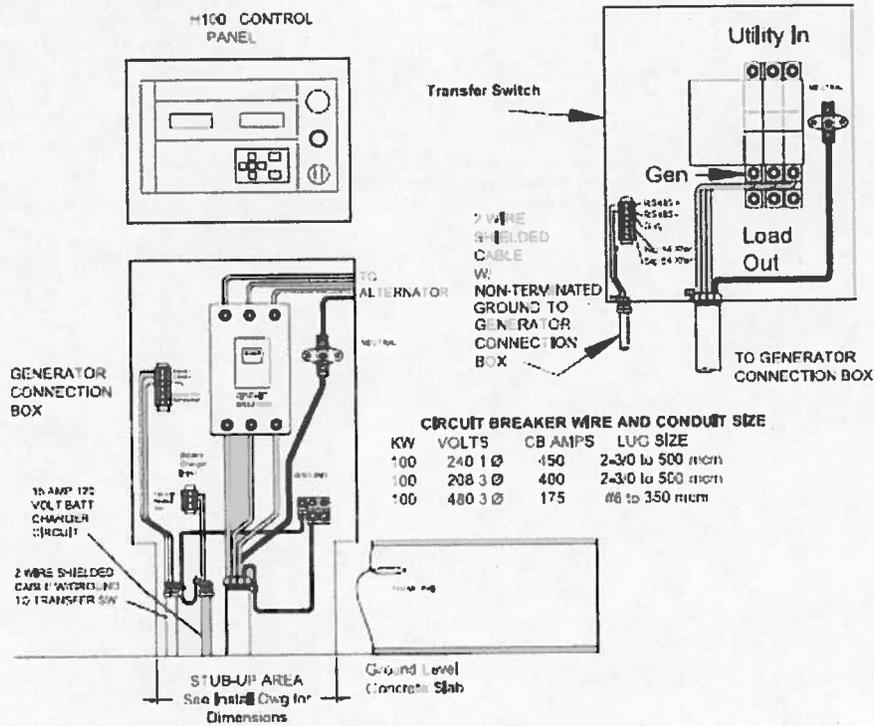
OPERATING DATA

		COMMERCIAL 100 kW		
KW RATING		100		
ENGINE SIZE		6.8 Liter V-10		
GENERATOR OUTPUT VOLTAGE/KW - 60Hz		KW	AMP	CB Size
120/240V, 1-phase, 1.0 pf		100	417	450
120/208V, 3-phase, 3.0 pf		100	347	400
277/480V, 3-phase, 3.0 pf		100	150	175
GENERATOR LOCKED ROTOR KVA AVAILABLE @ VOLTAGE DIP OF 35%				
Single phase or 208 3-phase		200		
480V 3-phase		240		
ENGINE FUEL CONSUMPTION (Natural Gas)				
Exercise cycle	ft ³ /hr.	300		
25% of rated load	ft ³ /hr.	371		
50% of rated load	ft ³ /hr.	713		
75% of rated load	ft ³ /hr.	991		
100% of rated load	ft ³ /hr.	1280		
ENGINE COOLING				
Air flow (inlet air including alternator and combustion air)		ft ³ /min 6500		
Coolant capacity		US gal. 4.5		
Heat rejection to coolant		BTU/hr. 348,000		
Max. operating air temp on radiator		°C (°F) 60 (150)		
Max. ambient temperature		°C (°F) 50 (140)		
COMBUSTION AIR REQUIREMENTS				
Flow at rated power 60 Hz		cfm 262		
SOUND EMISSIONS IN DBA				
Exercising at 7 meters		61		
Full load at 7 meters		74		
EXHAUST				
Exhaust flow at rated output 60 Hz		cfm 439		
Exhaust temp. at muffler outlet		°F 925		
ENGINE PARAMETERS				
Rated synchronous RPM		60 Hz 2300		
HP at rated KW		60 Hz 155		
POWER ADJUSTMENT FOR AMBIENT CONDITIONS				
Temperature Deration				
3% for every 10 °C above - °C		25		
1.65% for every 10 °F above - °F		77		
Altitude Deration				
1% for every 100 m above - m		182		
3% for every 1000 ft. above - ft.		600		

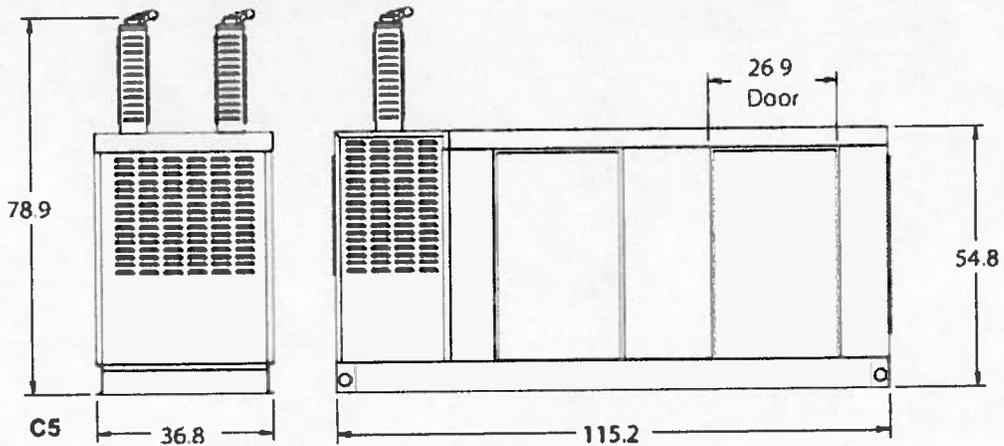
RATING: All three phases units are rated at 0.8 power factor. All single phase units are rated at 1.0 power factor. **STANDBY RATING:** Standby ratings apply to installations served by a reliable utility source. The standby rating is applicable to varying loads for the duration of a power outage. There is no overload capability for this rating. Ratings are in accordance with ISO-3046-1. Design and specifications are subject to change without notice. kW rating is based on LPG fuel and may derate with natural gas.

INTERCONNECTIONS

100 kW



INSTALLATION LAYOUT



UNIT WEIGHT 2705 LBS.

GENERAC POWER SYSTEMS, INC. P.O. BOX 297 WHITEWATER, WI 53190
 WEBSITE: www.guardiangenerators.com

03.05

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Potomac Radio SPEX 2009-0029 & CMPT 2009-0029
Applicant Proposed Construction mitigation
April 9, 2010

The Applicant will coordinate with the County's Urban Forester and other County staff, prior to site plan approval to incorporate methods to the maximum extent practicable, to reduce the impacts of construction on the site to include such measures as, but not limited to: using of the current road for heavy construction equipment, grinding and chipping the tree stumps and vegetation in place to create an organic layer to reduce siltation (if any); tree clearing to be kept to a minimum; using methods to support construction/tree removal equipment and maintenance of the drainage feature;; minimizing ground disturbance other than tree removal for the installation of the radials; minimizing ground disturbance for the transmitter building and tower foundations which will be at or near the existing grades; using a prefabricated transmitter building; and pre-assembling the towers and related equipment.

The Applicant will coordinate with the Department of Building and Development during site plan review to implement erosion and sediment controls that will minimize impacts to the site.

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Benefits of WAGE Radio

- ✦ Community stations like WAGE include reports on local news, local sports, community concerns, and charitable and religious activities in their broadcasts. It is the only free source of immediately available local information accessible to all the County's residents, without charge or subscription.
- ✦ WAGE has been a partner with Loudoun's local first responders, ensuring that our local communities are alerted to emergency information.
- ✦ Since its inception more than 50 years ago, WAGE has acted through the FCC-mandated Emergency Broadcast System and Emergency Alert Systems and has been the backbone of public warning systems utilized by local, state and federal first-responder and homeland security agencies.
- ✦ WAGE has provided specific services of critical significance including broadcast of Amber Alerts about missing or endangered children, information about school closings; special announcements requested by the Loudoun County Sheriff or Loudoun County Fire and Rescue, and information about power outages.
- ✦ WAGE has provided the only outlet for live play-by-play coverage of local Loudoun high school sports competitions and playoffs, even if out-of-town.
- ✦ WAGE provided Loudoun's only local broadcasts of the Redskins, Orioles, Nationals and Hokies.
- ✦ WAGE is a commercial business and will provide tax revenues to Loudoun County and the Town of Leesburg.
- ✦ WAGE will provide rental income to Loudoun Water for its operations.

Importance of AM Radio

- ❖ In an emergency people tune to their local radio station for news and emergency information.
- ❖ During such emergencies, broadband circuits -- wired or mobile -- overload, clog and experience dramatic slowdowns and disruptions because they were not designed for simultaneous use by everyone. Moreover, access to the Internet is all but disabled by commercial power failures. AM radio broadcast transmissions blanket an unlimited number of users with the same information from a central point simultaneously and are unaffected by such limitations.
- ❖ Broadcasting information through the regular pathways of radio stations provides a way to blanket crisis areas, or almost the entire country, if needed, with information essential to save lives throughout a crisis, regardless of duration. When mobile calls cannot connect, wireline circuits overload, broadband access and systems go down, and commercial power fails, AM radio gets through.
- ❖ Broadcasters have the ability to provide this crisis service today.

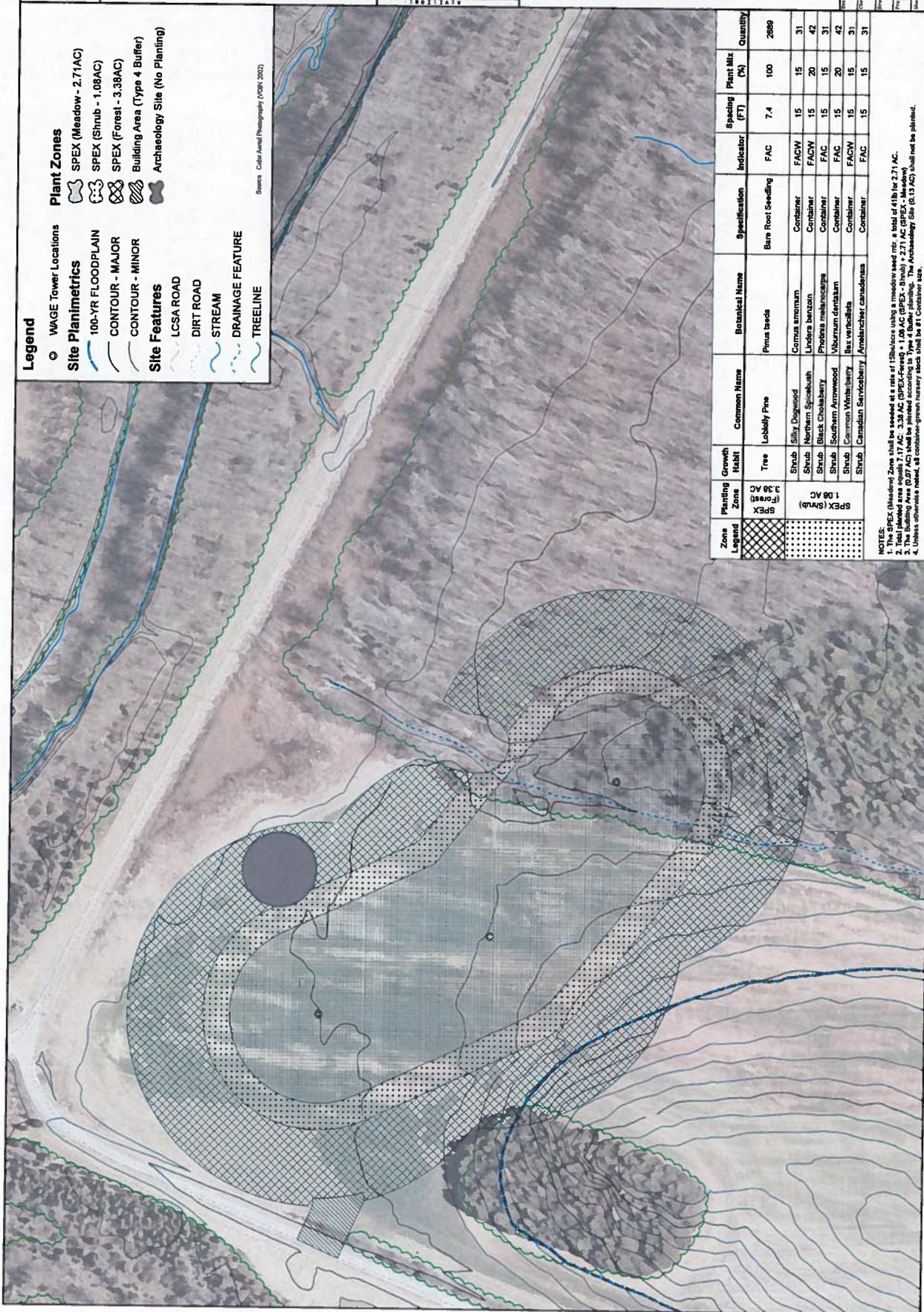
PLANTING PLAN

Legend

WAGE Tower Locations
 Site Planimetrics
 100-YR FLOODPLAIN
 CONTOUR - MAJOR
 CONTOUR - MINOR
 Site Features
 LCSA ROAD
 DIRT ROAD
 STREAM
 DRAINAGE FEATURE
 TREETLINE

Plant Zones
 SPEX (Meadow - 2.71AC)
 SPEX (Shrub - 1.08AC)
 SPEX (Forest - 3.38AC)
 Building Area (Type 4 Buffer)
 Archaeology Site (No Planting)

Source: Color Aerial Photography (VDM, 2002)



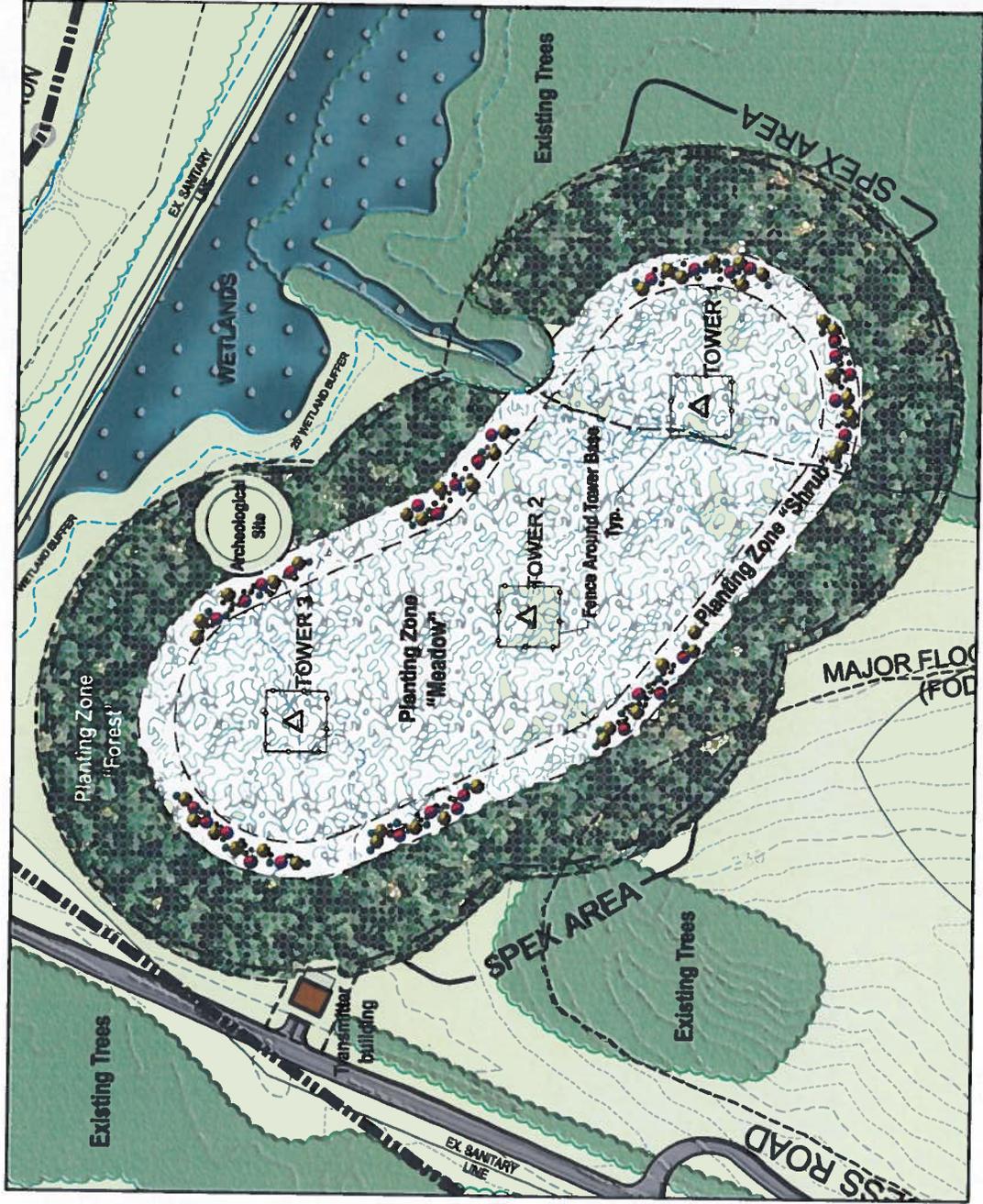
Zone Legend	Planting Zone	Growth Habit	Common Name	Botanical Name	Specification	Indicator	Spacing (FT)	Plant Mix (%)	Quantity
[Cross-hatch pattern]	SPEX (Forest) 3.38 AC	Tree	Loblolly Pine	Pinus taeda	Bare Root Seedling	FAC	7.4	100	2886
[Dotted pattern]	SPEX (Shrub) 1.08 AC	Shrub	Silly Dogwood	Cornus amomum	Container	FAOW	15	15	31
[Dotted pattern]	SPEX (Shrub) 1.08 AC	Shrub	Northern Spicebush	Lindera benzoin	Container	FAOW	15	20	42
[Dotted pattern]	SPEX (Shrub) 1.08 AC	Shrub	Black Chokeberry	Phytolacca melanocarpa	Container	FAC	15	15	31
[Dotted pattern]	SPEX (Shrub) 1.08 AC	Shrub	Southern Arrowwood	Viburnum dentatum	Container	FAC	15	20	42
[Dotted pattern]	SPEX (Shrub) 1.08 AC	Shrub	Common Winterberry	Ilex verticillata	Container	FAOW	15	15	31
[Dotted pattern]	SPEX (Shrub) 1.08 AC	Shrub	Canadian Sarsaparilla	Ampelopsis canadensis	Container	FAC	15	15	31

NOTES:
 1. The SPEX (Meadow) Zone shall be seeded at a rate of 15#/acre using a meadow seed mix, a total of 41lb for 2.71 AC.
 2. The SPEX (Forest) Zone shall be seeded at a rate of 15#/acre using a forest seed mix, a total of 50.7lb for 3.38 AC (SPEX-Forest) + 1.08 AC (SPEX - Shrub) + 2.71 AC (SPEX - Meadow).
 3. The SPEX (Shrub) Zone shall be seeded at a rate of 15#/acre using a shrub seed mix, a total of 16.2lb for 1.08 AC (SPEX - Shrub).
 4. Unless otherwise noted, all container-grown nursery stock shall be #1 Container size.

blueskies

Blueskies Environmental Associates, Inc.
 4177 Peach Blossom Avenue, Suite 204
 Middleburg, Virginia 22122-1871
 (800) 333-0836 #
 (540) 333-0836 #

NO.	DATE	REVISIONS
1	11/17/2011	ISSUE FOR PERMIT
2	11/17/2011	ISSUE FOR PERMIT
3	11/17/2011	ISSUE FOR PERMIT
4	11/17/2011	ISSUE FOR PERMIT
5	11/17/2011	ISSUE FOR PERMIT
6	11/17/2011	ISSUE FOR PERMIT
7	11/17/2011	ISSUE FOR PERMIT
8	11/17/2011	ISSUE FOR PERMIT
9	11/17/2011	ISSUE FOR PERMIT
10	11/17/2011	ISSUE FOR PERMIT



Key

-  Forest Zone 3.30Ac
-  Shrub Zone 1.08Ac.
-  Meadow Zone 2.71Ac.

Planting Area Approx. 7.1 AC
 Total SPEX Area 7.5 AC

DESIGN	SURVEY
DRAWN	DATE
CHECKED	SCALE
SHEET	FILE NOS. 10347-4-
	OF

Patton Harris Rust & Associates
 Engineers, Surveyors, Planners, Landscape Architects
PHRA
 208 Church Street SE
 Leesburg, VA 20175
 T 703.777.3616
 F 703.777.3725

**CONCEPTUAL
 LANDSCAPE PLAN**

**POTOMAC RADIO
 SPECIAL EXCEPTION
 COMMISSION PERMIT
 BROAD RUN ELECTION DISTRICT
 LOUDOUN COUNTY, VIRGINIA**

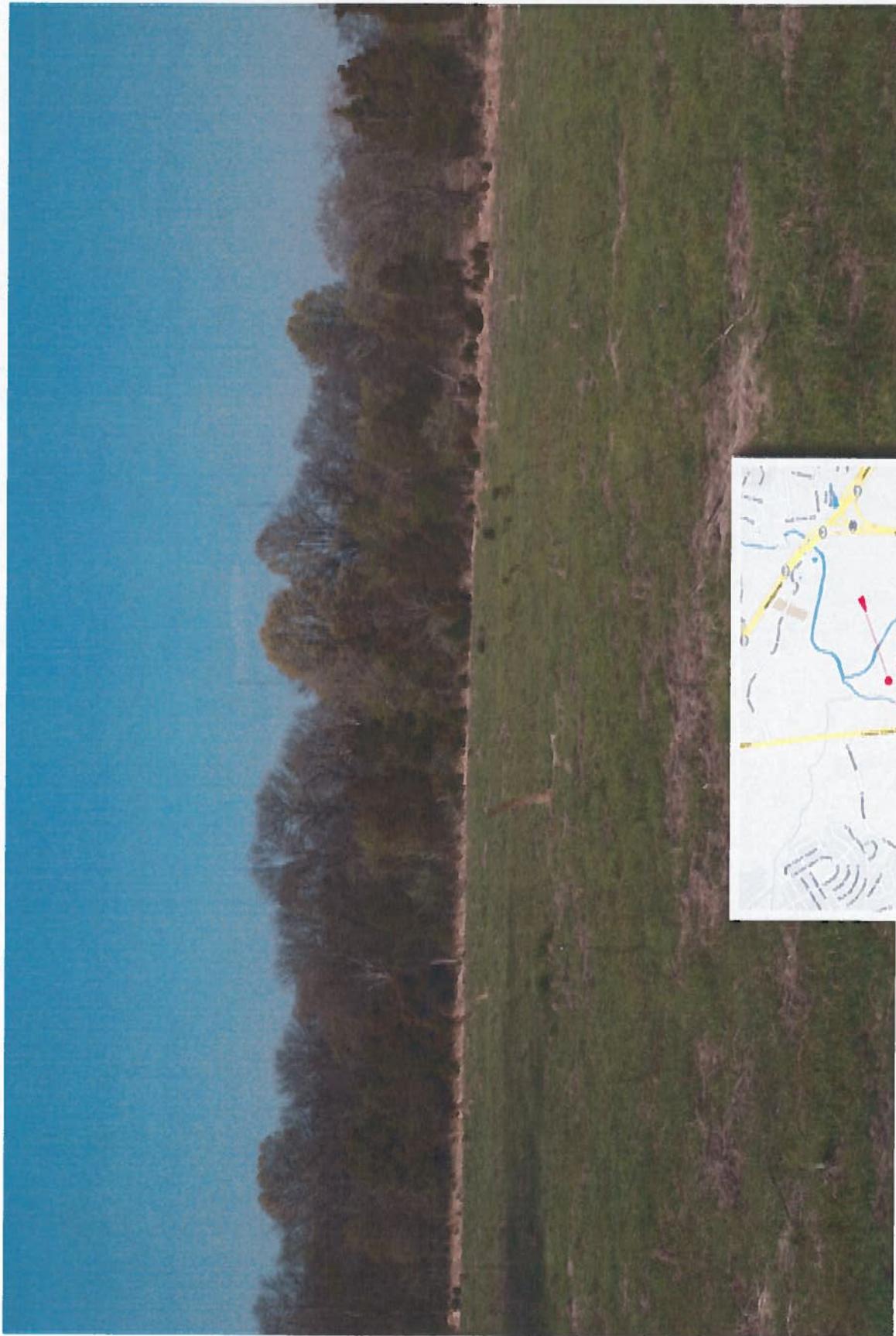
PROJECT
 PROFESSIONAL SEAL

REVISION	DATE	CHG

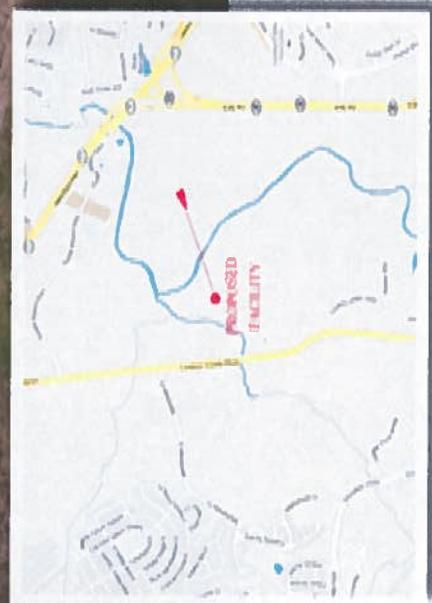


**VIEW FROM JUST
SOUTH OF SITE WITH
PLANTING PLAN**

**PROPOSED POTOMAC
RADIO TOWERS**



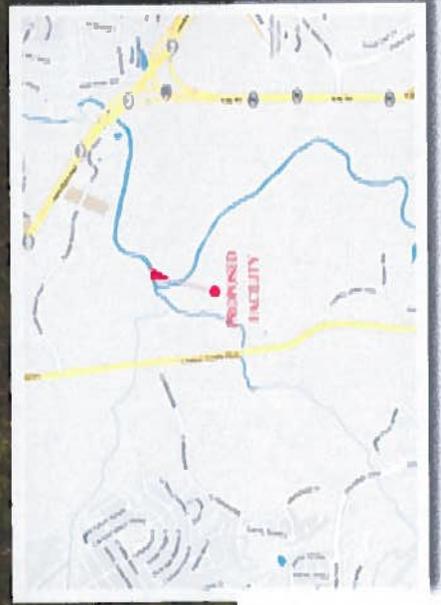
**VIEW FROM
KINCORA
PROPERTY**



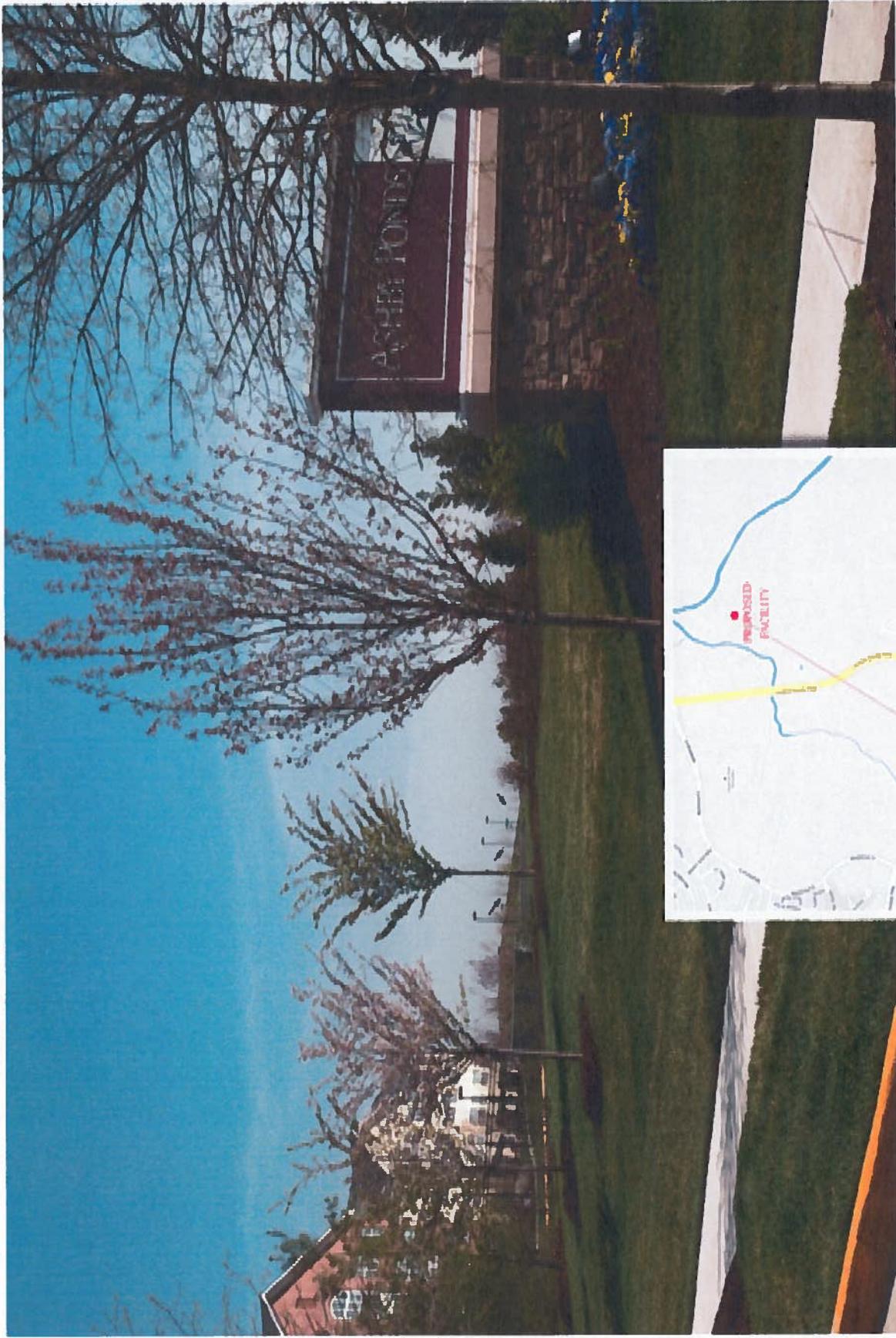
**PROPOSED POTOMAC
RADIO TOWERS**



**VIEW FROM
HERON
ROOKERY**



**PROPOSED POTOMAC
RADIO TOWERS**



**VIEW FROM
ASHBY
PONDS**



**PROPOSED POTOMAC
RADIO TOWERS**

PROPOSED POTOMAC RADIO TOWERS



VIEW ACROSS FROM ELEMENTARY SCHOOL