

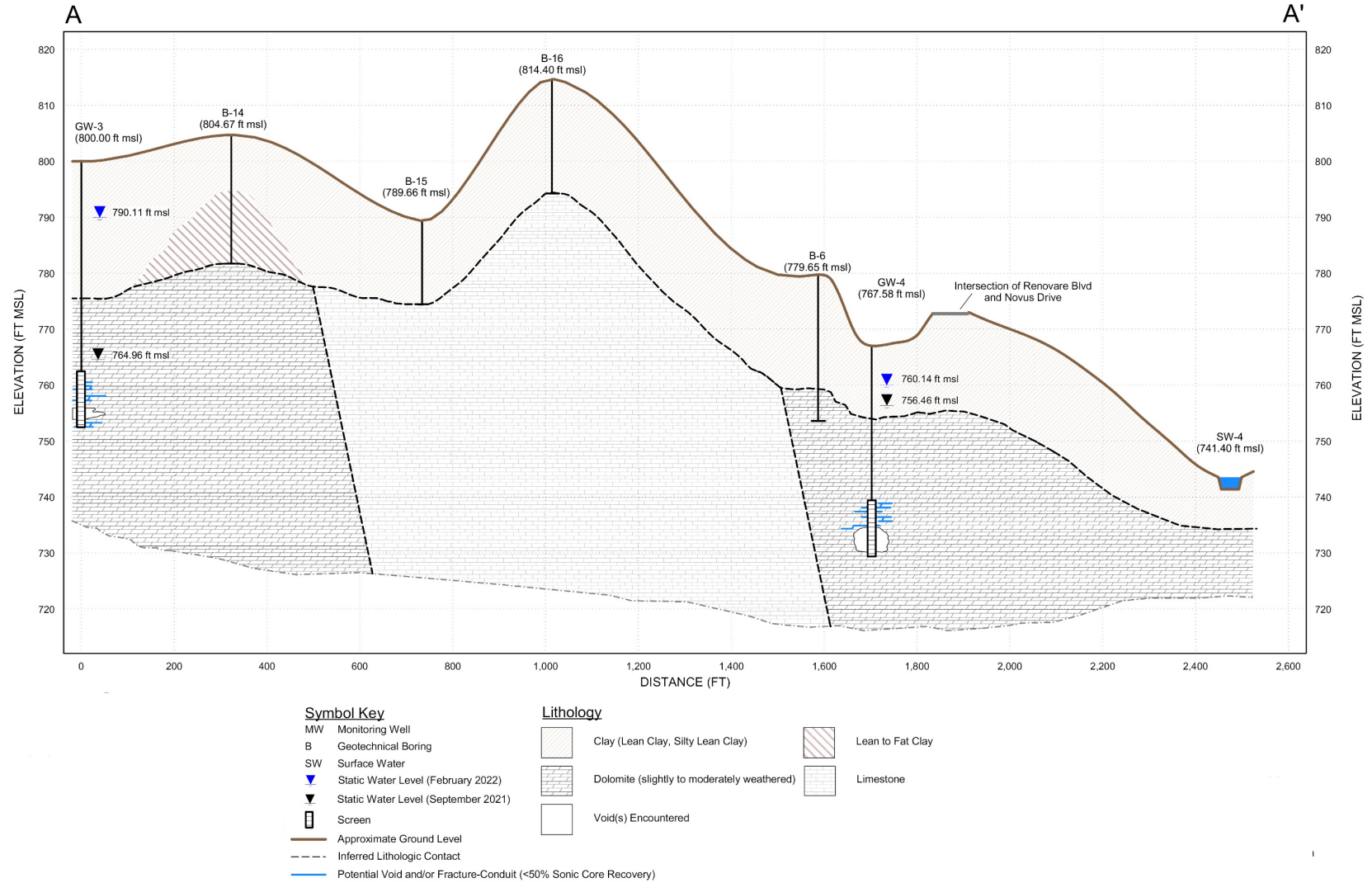
Enclosure 2 – Reference Material for Responses to Observation ER-GW-1 and RAIs ER-TES-1, ER-TES-2, and ER-TES-3

This enclosure includes the following reference documents for each of the relevant RAI responses listed below:

- Reference Material for Response to Observation ER-GW-1
 - Revised Figure 3.3.3-4 “Representative Fence Diagram Illustrating Geologic Cross Section of Horizon Center Site at A-A”
- Reference Material for Response to RAI ER-TES-1
 - Amendment Number Three (3) to Declaration of Covenants, Conditions, and Restrictions of the Horizon Center, Roane County Register of Deeds, December 6, 2013, Deed Book 1487, Pages 815-854
- Reference Material for Response to RAI ER-TES-2
 - USFWS IPaC query output dated March 14, 2022 (USFWS, 2022)
- Reference Material for Response to RAI ER-TES-3
 - TDEC Rare Species database query output dated September 21, 2021 (TDEC 2021)

Figure 3.3.3-4

Representative Fence Diagram Illustrating Geologic Cross Section of Horizon Center Site at A-A'



Notes:

Orientation (angle) of inferred lithologic contact(s) between bedrock (e.g., dolomite and limestone) represents approximate dip (angle, 35 degrees SE) observed during drilling operations illustrated on the 30:200 vertical-to-horizontal exaggerated-profile scale. Driller noted feeling auger chattering/walking down a pinnacle like formation at B-14.

AMENDMENT NUMBER THREE (3) TO
DECLARATION OF COVENANTS, CONDITIONS AND RESTRICTIONS
OF THE HORIZON CENTER

THIS AMENDMENT NUMBER THREE TO DECLARATION OF COVENANTS, CONDITIONS AND RESTRICTIONS (Amendment No 3) is made and entered into as of the 1 st day of July, 2013 by the Industrial Development Board, of the City of Oak Ridge, Tennessee, a not -for- profit Corporation.

AMENDMENT NUMBER THREE PREPARED BY:

Industrial Development Board of the City of Oak Ridge, Tennessee
1400 Oak Ridge Turnpike
Oak Ridge, TN 37830

BK/PG: 1487/815-854
13008340

40 PGS : AL - RESTRICTIVE COVENANTS	
MELISA BATCH 102850	12/06/2013 - 11:45 AM
VALUE	0.00
MORTGAGE TAX	0.00
TRANSFER TAX	0.00
RECORDING FEE	200.00
ARCHIVE FEE	0.00
DP FEE	2.00
REGISTER'S FEE	0.00
TOTAL AMOUNT	202.00

ATTACHMENTS ARE PROVIDED AS EXHIBITS:

- Covenants..... pages 1 thru 16
- Exhibit A-Property page 1 of 1
- Exhibit B-Design Evaluation Criteria pages 1 thru 7
- Exhibit C-Exterior Lighting..... pages 1 thru 2
- Exhibit D-Plant List..... pages 1 thru 11
- Exhibit E-Sensitive Resources within the Natural Area page 1 of 1

STATE OF TENNESSEE, ROANE COUNTY
SHARON BRACKETT
REGISTER OF DEEDS

REFERENCE FOR ATTACHMENT THREE:

Miscellaneous Book N-22, page 162

WITNESSETH

IN WITNESS WHEREOF, the Industrial Development Board of the City of Oak Ridge, Tennessee has caused the Amendment to be executed by a duly authorized representative as of day and year first written.

THE INDUSTRIAL DEVELOPMENT BOARD OF THE
CITY OF OAK RIDGE, TENNESSEE

By: [Signature]

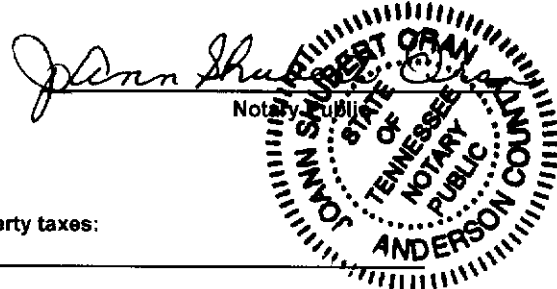
Name: David E. Wilson

Title: Chairman

I, or we, hereby swear or affirm that the actual consideration for this transfer or value of the property transferred, whichever is greater, is \$ EXEMPT, which amount is equal to or greater than the amount which the property transferred would command at a fair and voluntary sale.

[Signature]
Affiant

Sworn to and subscribed to me, this the 5th day of December, 2013.



My Commission expires Jan. 27, 2014.

Name of person or agency responsible for the payment of the real property taxes:
Name EXEMPT Address _____

STATE OF TENNESSEE)
)
COUNTY OF ANDERSON)

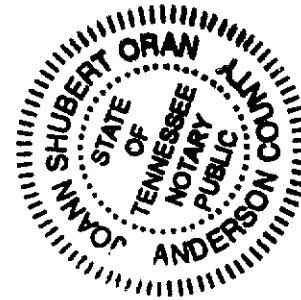
Personally appeared before me, a Notary Public, DAVID E. WILSON, with whom I am personally acquainted, and who, upon oath, acknowledged himself to be the Chairman of THE INDUSTRIAL DEVELOPMENT BOARD OF THE CITY OF OAK RIDGE, TENNESSEE, the within named bargainer, a public corporation, and that he as such Chairman executed the foregoing instrument for the purpose therein contained, by signing the name of the corporation by himself as Chairman.

WITNESS my hand and seal, this 5th day of December, 2013.

Joann Shubert Oran
Notary Public

My Commission Expires:

Jan. 27, 2014



<p>Rev 1 July 1, 2013</p>

Horizon Center

Declaration of Covenants, Conditions and Restrictions

This DECLARATION OF COVENANTS, CONDITIONS AND RESTRICTIONS (this "Declaration") is made and entered into this day of (DATE), by THE INDUSTRIAL DEVELOPMENT BOARD, a Tennessee not-for-profit corporation (hereinafter referred to as "Declarant") for the benefit of its successors and assigns

charges, assessments, restrictions, easements, and reservations hereinafter set forth (collectively, the "Restrictions"):

ARTICLE I - DEFINITION OF TERMS

The following terms and words are defined for use herein as follows:

(a) "Association" shall have the meaning given to it in Article VII hereof.

(b) "Building" shall mean and include, but not be limited to, both the main portion of a structure built for permanent use and all projections or extensions thereof, including but not limited to, outside platforms and docks, canopies and enclosed accessory structures.

(c) "Building Site" shall mean any tract of real property within the Property, as determined by the legal description in a conveyance or lease thereof, sold or subleased by the Declarant to another entity, upon which Improvements are to be constructed. If two (2) or more adjacent Building Sites, are acquired by the same Owner or used as a single site by the same Occupant, such commonly owned Building Sites may, at the option of said Owner or Occupant, be combined and treated as a single Building Site for purposes of this Declaration, provided that the location of the Improvements on such combined Building Sites shall be subject to the prior written approval of the Declarant.

WITNESSETH:

WHEREAS, the Declarant is the owner (pursuant to a Deed dated (DATE) between the United States of America, acting by and through the Department of Energy, as further evidenced by Deed recorded in Miscellaneous Book _____ DN22, Page ___ 162-200 ___, in the Registrar's Office of Roane County, Tennessee) (the "Deed") and owner and manager of certain real property located in Roane County, Oak Ridge, Tennessee, commonly known as Horizon Center (hereinafter referred to as the "Property") which Property is more particularly described on Exhibit A attached hereto and incorporated hereto by this reference, and

WHEREAS, Declarant desires that the Property be developed and maintained as an advanced scientific production and manufacturing community concentrating on the development, promotion and advancement of science, technology, research, and other forms of concepts or ideas, and for other uses as set forth in this Declaration; and

WHEREAS, Declarant desires to establish certain covenants, conditions and restrictions regarding the use and occupancy of the Property.

NOW, THEREFORE, in consideration of the premises herein contained, the Declarant hereby subjects the Property to the following covenants, charges, assessments, conditions and restrictions and declares that the Property is and shall be held, transferred, sold, conveyed, leased, subleased and occupied subject to the following conditions, covenants,

<p>Rev 1 July 1, 2013</p>

Horizon Center

Declaration of Covenants, Conditions and Restrictions

ARTICLE I - DEFINITION OF TERMS (cont.)

(d) "Common Area" shall mean and include those tracts of real property intended to be devoted to the common use and enjoyment of the Owners and Occupants of the Property. Common Area shall include the Natural Area of Horizon Center, road rights-of-ways, and land areas that are or shall be established for the common use of the Owners and Occupants, and any other portion of the Property except Building Sites.

(e) "Common Facilities" shall mean and include all Improvements located on Common Areas.

(f) "Declarant" shall mean THE INDUSTRIAL DEVELOPMENT BOARD OF THE CITY OF OAK RIDGE, TENNESSEE, a public non-profit corporation organized and existing under the law of the State of Tennessee.

(g) "Declaration" shall mean this Declaration of Covenants, Conditions and Restrictions, together with all of the provisions contained herein as they now appear and as they may be hereafter amended.

(h) "Design Evaluation Criteria" shall mean the evaluation criteria, set forth in EXHIBIT B hereto and incorporated herein by reference, which the Executive Staff of the Declarant shall use to evaluate the Plans submitted by the Owner or Occupant for approval.

(i) "Executive Staff" shall mean the Industrial Development Board of the City of Oak Ridge, Tennessee Chairman and any staff member and/or consultant he or she designates for the purpose of evaluating Plans submitted by an Owner or Occupant.

(j) "Horizon Center" shall be the name of the Property and shall mean the Property when used herein and in EXHIBITS referred to herein.

(k) "Improvements" shall mean and include, but not be limited to, Buildings, roads, driveways, parking areas, fences, screening walls, retaining walls, loading areas, signs, utilities, lawns, landscaping, and walkways, located on Building Sites, together with any construction, work or treatment done or applied to a Building Site in connection therewith.

(l) "Land Use Committee" shall mean the Declarant's Board of Directors, one of the functions of which, among many, is to hear appeals of decisions of the Executive Staff.

(m) "Natural Area" shall mean and include those tracts of real property to remain undeveloped and in a natural state. Generally, such land is defined as being within the 100-year flood plain of the East Fork Poplar Creek and/or a buffer area of 100 feet on either side of the centerline of the East Fork Poplar Creek and its tributaries. In addition, segments of real property lying between road rights-of-way and/or land areas designated for development and the boundary of the 100-year flood plain or the 100-foot buffer areas shall be included in the Natural Area.

(n) "Sensitive Resources" shall mean ecological resources within the Natural Area that require protection. This includes certain plant species, aquatic species, and wildlife habitat. The specific sensitive areas that require protection are identified in EXHIBIT E.

ARTICLE I - DEFINITION OF TERMS (cont.)

<p>Rev 1 July 1, 2013</p>

Horizon Center

Declaration of Covenants, Conditions and Restrictions

(o) "Occupant" shall mean an entity or person, including without limitation, an individual, corporation, joint venture, partnership, limited liability company, or association, which has purchased, leased, rented or has otherwise legally acquired the right to occupy and use any Building or Building Site, whether or not such right is exercised. "Occupant" shall not mean the lessor to the Declarant, the United States of America acting by and through the Department of Energy.

(p) "Owner" shall mean an entity, or person, including without limitation, an individual, corporation, joint venture, partnership, limited liability company, or association, which is record owner of a fee simple estate in a Building Site or other tract of real property located in the Property.

(q) "Plans" shall mean those design submittals required by the Design Evaluation Criteria for the construction of Improvements on a Building Site.

(r) "Value Points" shall mean score received by the Plans as compared to the Design Evaluation Criteria.

(s) "Visual Buffering" shall mean an installation of earth contouring and/or landscaping plants that shall partially obscure (or screen) views from one area to another as required by Section 5.9.

ARTICLE II - PURPOSE OF THIS DECLARATION

This Declaration is made to insure proper use, development and improvement of the Property so as to: (i) protect Owners and Occupants against such use of neighboring Building Sites as might depreciate the value of their property; (ii) guard against the erection in the Property of

structures built with unsuitable materials or with improper quality or methods of construction; (iii) insure adequate and reasonable development of the Property; (iv) encourage the erection of attractive, permanent Improvements appropriately located to ensure harmonious appearances and functions; (v) provide adequate off-street parking space and loading facilities; (vi) ensure protection of the sensitive resources in the Natural Area; and (vii) encourage the development of advanced technological, architectural and engineering design and, in general, provide a harmonious development that will promote the general welfare of Owners and Occupants of the Property.

ARTICLE III – PERMITTED LAND USES

3.1 Permitted Land Use. Building Sites shall be used for advanced scientific and technological research and product development facilities, office, industrial, manufacturing uses, service industries, and semi-public and public uses, including utility structures. Uses shall include warehousing related to the operation of the aforesaid facilities.

3.2 Basis of Evaluation. The Design Evaluation Criteria shall be the basis of evaluation as to whether or not any present or intended design of a Building Site by an Owner or Occupant is within the meaning and intent of this Declaration and whether same is in keeping with the purposes referred to in Article II above. It is acknowledged and agreed that the uses and structures on the Building Sites as of the date hereof are in compliance with the purposes set forth in Article II and the restrictions set forth in Article V hereof.

<p>Rev 1 July 1, 2013</p>

Horizon Center

Declaration of Covenants, Conditions and Restrictions

ARTICLE IV - BUILDING PLANS APPROVAL

4.1 Design Evaluation. The Design Evaluation Criteria shall provide guidance to the Owner or Occupant in determining the criteria by which the Plans shall be reviewed for suitability, compatibility and conformance to the purpose and intent referred to in Article II above.

4.1.2 Evaluation Results. The Executive Staff shall evaluate submitted Plans in accordance with the Design Evaluation Criteria. In the event a submittal does not score sufficient Value Points for approval as designated in the Design Evaluation Criteria, the Executive Staff shall present the results of its evaluation to the Owner or Occupant. The Owner or Occupant may then revise and resubmit the Plans for reevaluation and approval. If, however, the Owner or Occupant is in disagreement with the findings of the Executive Staff, the Owner or Occupant may request a review upon written notice to the Declarant. The Land Use Committee shall hear such appeals within 14 days of receipt of the notice to the Declarant. Should the Land Use Committee concur with findings of the Executive Staff by majority vote, then the decision of the Executive Staff shall be binding. Should the Land Use Committee determine that the Plans contain sufficient Value Points, then the Owner or Occupant shall be permitted to proceed with Plans as originally presented or with such conditions as the Committee may impose.

4.2 Approval of Plans. The Declarant shall exercise its best judgment, based upon the Design Evaluation Criteria, to see that all Buildings and Improvements (including landscaping) conform and harmonize with existing and anticipated Buildings and Improvements in the Property regarding final design, quality, type of construction, material, color, setting, height, grade and finished ground elevation. Actions of Declarant through its approval or disapproval of Plans submitted

pursuant to the provisions of this Article 4.2, or in respect of any other matter before it, shall be conclusive and binding on all parties. All communications to Declarant shall be address as follows:

Horizon Center Design Evaluation and Approval Process
c/o The Industrial Development Board
of the City of Oak Ridge, Tennessee
Attn: Mr. David Wilson
1400 Oak Ridge Turnpike
Oak Ridge, Tennessee 37830

or to any such address as Declarant shall hereafter designate in writing addressed to Owners and Occupants, by certified or registered mail. (*Revised Amendment One, on March 11, 2010*)

ARTICLE V - RESTRICTIONS

The following restrictions are imposed on the Property, and are in addition to zoning restrictions and regulations, applicable building and inspection codes and regulations and any other governmental restrictions and requirements, and any private restrictive covenants applicable to the Property (these regulations and restrictions being collectively referred to herein as the "Regulations"):

5.1 Construction Materials. All exterior walls of any Improvements placed on the Property shall utilize principal exterior wall materials of stone masonry, brick, architectural concrete block using a combination of colored and textures units, articulated concrete panels, or combinations thereof, or their equivalent or better. Insulating composition metal wall-panel

<p>Rev 1 July 1, 2013</p>

Horizon Center

Declaration of Covenants, Conditions and Restrictions

ARTICLE V – RESTRICTIONS (cont.)

systems or painted concrete block may also be utilized for entire facades, with written approval of Declarant, at such building facades that are not routinely visible from neighboring Building Sites, Common Areas, or public streets.

5.2 Area, Yard, Height and Setback Requirements. All Building Sites shall be designed in accordance with the provisions of the IND-2 Zone of the Zoning Ordinance of the City of Oak Ridge.

5.3.1 Site Placement. All Buildings and other Improvements shall be placed so that the existing topography and landscape shall be disturbed to the minimum extent commercially reasonable, and so that the maximum number of desirable trees and other natural features will be preserved. Written permission must be obtained from Declarant prior to commencing removal of trees of greater than 5-inch caliper, or other natural features.

5.3.2 Protection of Indiana Bat Habitat. The habitat for an endangered “Indiana bat” should be protected by retaining live or dead trees with exfoliating bark whenever possible. Should circumstances require the cutting of those trees, they should not be cut between April 15 through September 15 unless the required processes of the Fish & Wildlife Service are followed.

5.4 Temporary Structures. No temporary Buildings or other temporary structures shall be permitted on any Building Site; however, temporary buildings, barricades and the like shall be permitted for construction purposes during the construction period of a permanent Building. Such structures shall be placed as inconspicuously as reasonably possible, shall cause no inconvenience to Owners or Occupants, and shall be

removed no later than thirty (30) days after the date of completion or the date of occupancy of the Building(s) (whichever date is first) in connection with which the temporary structure was used.

5.5 Other Structures. No kiosks, trailers, elevated tanks, storage tanks, or other similar structures shall be located on the Property without screening from view from neighboring Building Sites, or Common Areas (except construction trailers are permitted during the construction period but shall be removed as set forth in Paragraph 5.4). Any tanks for use in connection with any business, industry or manufacturing process, including tanks for the storage of fuels, must be buried or screened sufficiently to conceal them from view of neighboring Building Sites, or public streets.

5.6 Parking, Loading and Unloading Areas. All Building Sites shall have sufficient off-street parking to accommodate the needs of the Owner or Occupant without requiring parking off of the Property. No parking shall be permitted on any street or drive, or any place other than the paved parking spaces on a Building Site; and each Owner or Occupant shall be responsible for compliance by its employees and visitors, and shall be subject to the sanctions referred to in Paragraph 5.19 hereinafter for any violations committed by its employees or visitors.

Off street automobile parking and unloading spaces shall be as approved by Declarant. All parking visible from public roads shall be landscaped as recommended by the City of Oak Ridge Design Guidelines. All off-street parking lots shall be landscaped using an appropriate combination of trees and shrubbery installed in medians, islands, and around parking areas to visually segment

Rev 1 July 1, 2013

Horizon Center

Declaration of Covenants, Conditions and Restrictions

ARTICLE V – RESTRICTIONS (cont.)

large paved areas thereby partially screening off-street parking areas to meet the provisions set forth in the Design Evaluation Criteria.

Loading areas shall not be visible from any public street unless specifically approved by Declarant. Loading docks shall be set back and screened to minimize the effect of their appearance from neighboring Building Sites, Common Areas, and public streets.

5.7 Service Screening, Storage Areas. Garbage and refuse containers shall be contained within the Buildings or shall be concealed by means of a screening wall of material similar to and compatible with that of the Building or shall be screened using Visual Buffering. These elements shall be integral with the concept of the Building plan and/or landscaping plan. Visual Buffering shall be considered a suitable substitute for screen walls as described herein. Unless specifically approved by Declarant, no materials, supplies or equipment shall be stored on any area on a Building Site except inside a closed Building, or behind Visual Buffering so that they are screened from neighboring Building Sites, Common Areas or public streets. Visual Buffering shall not be required when the natural vegetation existing in an adjacent Natural Area at a side or rear property line is of such location and density that views from adjacent Building Sites or public streets are screened the same as if Visual Buffering were installed.

5.8 Streets, Drives, Curbs and Walks. Streets, drives and curbs shall be constructed or altered in accordance with Plans submitted to and approved by Declarant; provided, however, no such streets, drives and curbs shall be located on a Building Site without the prior written approval of the Owner or Occupant of such Building Site. The perimeter

of all paved drives, parking areas, parking lot islands, and service areas shall have concrete curbing.

5.9.1 Landscaping and Irrigation. All Building Sites shall provide Visual Buffering to screen views into adjacent utilitarian buildings, parking areas, and service and utility areas. As a minimum, landscaping beds at facility entrance drives, Building entrances and other areas where such beds are provided as part of a landscaping plan, shall have an automatic underground irrigation system. Visual Buffering shall maintain eighty percent (80%) opacity in the summer months and sixty percent (60%) opacity in the winter months, and shall consist of a variety of canopy trees, evergreen trees, flowering trees, large shrubs and seasonal flowering plants planted in a meandering, not rigid row, fashion. Parking areas shall be screened using earth contouring and/or a variety of canopy trees, evergreen trees, flowering trees, large shrubs and seasonal flowering plants to meet the requirements of the Zoning Ordinance of the City of Oak Ridge and the recommendations of the City of Oak Ridge Design Guidelines.

5.9.2 Plant Species. Plants that are native to the Ridge and Valley Province and consistent with local community types should be used for re-vegetation of disturbed areas and landscaping of developed areas. Some of the plants are identified in EXHIBIT D. In situations where rapid re-vegetation of construction areas is necessary between site clearing and actual construction, to minimize soil erosion and sedimentation, a seed mixture of annual ryegrass and white clover will be used. Finally, lawn areas should be kept to a minimum, to the extent possible.

<p>Rev 1 July 1, 2013</p>

Horizon Center

Declaration of Covenants, Conditions and Restrictions

ARTICLE V – RESTRICTIONS (cont.)

5.9.3 Landscaping Approval. Every Building Site on which a Building is placed shall be landscaped in accordance with Plans submitted to, and approved by, Declarant. Landscaping as approved by Declarant shall be installed within ninety (90) days of occupancy or completion of the Building, whichever occurs first.

5.10 Exterior Materials, Colors. Finish building materials shall be applied to all sides of a Building, which are visible to the general public, as well as from neighboring Building Sites. Colors shall be harmonious and compatible with colors of the natural surroundings and other adjacent Buildings. Declarant shall have the sole right to approve or disapprove materials and colors so controlled.

5.11 Signs. All Building and Building Site exterior signage shall be in accordance with the requirements of the Zoning Ordinance of the City of Oak Ridge. All Building Sites shall provide a Building identification sign, which shall be a ground mounted and/or a Building mounted sign for each Building Site. Ground mounted Building identification signs shall be located near the entrance to the principal Building and shall have a maximum area of 40 square feet per panel side and maximum height of eight (8) feet above finished grade, and shall be placed no closer to the roadway right-of-way than ten (10) feet. In the event of dual entry Buildings which have entrances more than five hundred (500) feet apart, a second ground mounted Building identification sign shall be permitted near the secondary entrance, which shall have a maximum area of 40 square feet per panel side and a maximum height of five (5) feet above finished grade, and shall be placed no closer to the roadway right-of-way than ten (10) feet. All ground-mounted exterior signs shall be monument style ASI Sign Systems Model No. 1023CF, or equivalent, curved face, either internally illuminated or non-illuminated.

One additional exterior wall sign shall be allowed per Building at the Occupant's option using the Occupant's standard text and logo either indirectly illuminated or non-illuminated.

All exterior signs shall incorporate the color and text in accordance with specific standards for the Property as determined by the Executive Staff. Notwithstanding anything in this Section 5.11 to the contrary, the total panel area of all exterior signs shall be limited to two (2) square feet per lineal foot of the front face of the Building.

Notwithstanding the foregoing, all signage must be approved by Declarant in writing and in advance of installation.

Additional exterior signs essential to inform and direct the public such as tenant identification signs, receiving/shipping access and areas, specified parking areas, and the like may be permitted if approved by Declarant and in advance of installation.

Billboards and movable or portable advertising or business signs, including signs mounted on trailers and signs not securely fixed to the ground or Buildings are expressly prohibited throughout the Property.

5.12 Utilities; Mechanical Equipment; Roof Projections. All ground-mounted mechanical equipment, utility meters, and storage tanks shall be screened from other Building Sites, Common Areas, or public streets. If concealment within the Building is not possible, then such utility elements shall utilize Visual Buffering. Antennas shall be screened to the extent

<p>Rev 1 July 1, 2013</p>

Horizon Center

Declaration of Covenants, Conditions and Restrictions

ARTICLE V – RESTRICTIONS (cont.)

practicable and consistent with appropriate electromagnetic considerations.

Penthouses and rooftop mechanical equipment screen walls shall be of a design and materials similar to and compatible with those of the Building that they serve.

Underground utility lines throughout the Property shall be used. No electrical transformer or other such apparatus shall be located on any power pole or hung on the outside of any Building, but same may be placed on or below the soil surface, and where so placed, shall utilize Visual Buffering.

Large items such as air conditioning, ventilating or other mechanical equipment shall be screened or enclosed in such manner as to conceal such equipment from ground-level view from adjacent Building Sites and public streets. In extraordinary circumstances, where this may not be possible or practical, such elements shall be organized in an orderly manner in accordance with approval of Declarant. Projections shall be compatible with the Building.

5.13 Exterior Lighting. Each Building Site shall provide parking or pedestrian lighting compatible and harmonious throughout the Property according to the following limitations: (a) light poles and fixtures shall be selected from among those specified in EXHIBIT C; (b) light poles and fixtures shall be limited to a 30-foot maximum height; (c) light poles are to be a neutral, preferably dark, color; (d) all parking, road and security lights are to be cut-off luminaries; (e) all light sources are to be color corrected high-pressure sodium; (f) lighting intensity at entrances and use areas shall be a minimum five (5) foot-candles, paths and steps

an average of one (1) foot-candle and parking one-half foot-candle; (g) exterior illumination shall be directed away from adjoining properties; and (h) directed or reflected glare (i.e., floodlights) shall not be visible at any property line. All exterior lighting shall be designed, erected, altered and maintained in accordance with Plans submitted to and approved by Declarant.

5.14 Open Fires. Open fires of any type within the Property shall be expressly prohibited unless approved by Declarant.

5.15 Nuisances. No Building Site may be used for any purpose or business which is dangerous, unsafe, or constitutes nuisance, unsightliness or emits any noxious or offensive dust, odor, gas, smoke, glare, fumes or noise, or emits any radiation (electromagnetic or otherwise) or radioactivity beyond the property line of any Building Site.

5.16 Conditions of Property. The Owner and Occupant of any Building Site shall at all times keep the Building Site, Building, Improvements, and appurtenances in a safe, clean condition and comply in all respects with applicable government, health, fire and policy requirements and regulations. The Owner and Occupant will remove at its own expense all trash, rubbish, and refuse from its/their Building Site and shall not burn any materials or rubbish of any description. Accumulated rubbish must be stored in covered, screened containers and be removed regularly.

5.17 Other Use Restrictions. The Property may not be occupied or used in connection with the operation of (a) a theater, (b) a place of recreation or amusement, (c) any place selling or serving alcoholic beverages, (d) a bowling alley, (e) a billiard parlor, (f) a

<p>Rev 1 July 1, 2013</p>

Horizon Center

Declaration of Covenants, Conditions and Restrictions

ARTICLE V – RESTRICTIONS (cont.)

night club, (g) a retail sales facility, (h) an airport, (i) wholesaling facilities, (j) bulk oil and similar storage facilities, (k) utility uses, such as a coal fired power plant, (l) any use which would emit noxious odors or excessive vibration, (m) a farm or agricultural facility, or (n) a residential facility.

5.18 Use of Natural Area. Use of land within the Natural area shall be permitted if such use is non-intrusive and consistent with the natural environment (e.g., walking paths, picnic areas), provided that such use does not negatively impact the sensitive resources within the Natural Area. Construction of habitable structures shall be prohibited in the Natural Area. Encroachment into the areas containing sensitive resources shall be expressly prohibited. Written permission must be obtained from the Declarant prior to commencing any activity in the Natural Area.

5.19 Cultural Items. If an unanticipated discovery of cultural materials (e.g. pottery, tools, human remains) or sites is made during development activities, all ground disturbing activities within the vicinity shall be halted immediately. The property owner shall be responsible for notifying the State Historic Preservation Office and the Eastern Band of Cherokee Indians Tribal Historic Preservation Office to initiate and complete consultation prior to any further disturbance of the discovery site area. Any cemeteries that may be located on the property shall be fenced and protected and shall remain in their same location as a separate land unit. Reasonable public ingress and egress to any such cemetery(s) shall not be impeded.

5.20 Variance. Declarant may grant a variance from these restrictions upon written application. Declarant shall grant or deny any application within thirty (30) days of submission to Declarant. If the application is

not granted or denied within the thirty (30) day period, the application shall be deemed to be denied. Declarant must receive approval from the Department of Energy – Oak Ridge Operations before granting a variance to the following: Article I –(m), (n); Article II – (vi); Article III –3.1; Article IV – 4.1.2; Article V – 5.3.2, 5.9.2, 5.17, 5.18, 5.19, and 5.20; Article XIII – 13.3; EXHIBITS A, B1, B19, and E.

5.21 Violations. Each Owner or Occupant shall be entitled to file complaints with Declarant alleging a violation of this Article. Declarant shall designate one (1) of its members or an agent who shall be readily available to investigate any complaints filed. If such member or agent shall conclude that any complaint filed has merit, the alleged violator shall be promptly notified in writing of the complaint; and, upon receipt of the written notice of the complaint, the alleged violator shall have ten (10) business days within which to begin in good faith to cure the violation or within which to file an appeal before Declarant. If the alleged violator does not begin in good faith to cure the violation or file an appeal within the ten (10) days provided, Declarant member or agent, as the case may be, may cause the violation to be cured at the expense of the Owner or Occupant deemed to be in violation. If the alleged violator appeals to Declarant, Declarant shall hear the appeal within seven (7) days. If a majority of members of the Land Use Committee uphold the findings of the individual member or agent, Declarant may cause the violation to be cured at the expense of the Owner or Occupant in violation, if the violator has not cured such violation within a reasonable time as determined by Declarant.

By owning, purchasing or leasing a Building Site, each Owner or Occupant binds itself, its successors and assigns, to pay to

Rev 1 July 1, 2013

Horizon Center

Declaration of Covenants, Conditions and Restrictions

ARTICLE V – RESTRICTIONS (cont.)

Declarant the actual cost to cure any violation hereunder together with liquidated damages of ten percent (10%) of such cost, which damages are, when collected, to be allocated by Declarant toward defraying the cost of enforcing this provision. Any costs so assessed against an Owner or Occupant, if not paid within ten (10) days of demand, shall become a lien against that Owner's or Occupant's Building Site which shall attach and become effective upon the filing by Declarant of a lien against such defaulting Owner's or Occupant's interests in the Register of Deeds Office for Roane County, Tennessee. Only Declarant shall be entitled to enforce the provisions of this Article V.

ARTICLE VI - PROPERTY AND COMMON AREA MAINTENANCE

6.1 Common Area Maintenance Costs. Each Owner or Occupant agrees to pay, or cause to be paid, to Declarant such Owner's or Occupant's pro rata share of the total cost and expense (the "Development Maintenance Costs") incurred by Declarant in connection with the operation of the Common Area, including, without limitation, mowing, maintenance, cleaning and repair of the public rights-of-way and easements, the gardening and landscaping and irrigation systems incident thereto, providing adequate lighting during business hours, utilities, the removal of snow and debris, and maintenance, cleaning and repair of all entrance and identification signs located within the Property. Each Owner's or Occupant's share of the Development Maintenance Costs shall be paid promptly when due and shall be a charge against such Owner's or Occupant's Building Site. By owning, purchasing or leasing a Building Site, each Owner or Occupant binds itself, its successors and assigns, to pay to Declarant the actual cost to cure any violation hereunder together with liquidated damages of ten percent (10%) of such

cost, which damages are, when collected, to be allocated by Declarant toward defraying the cost of enforcing this provision. Any costs so assessed against an Owner or Occupant, if not paid within ten (10) days of demand, shall become a lien against that Owner's or Occupant's Building Site which shall attach and become effective upon the filing by Declarant of a lien against such defaulting Owner's or Occupant's Building Site in the Register of Deeds Office for Roane County, Tennessee. Only Declarant shall be entitled to enforce the provisions of this Article VI.

6.2 Owner's or Occupant's Pro Rata Share. Each Owner's or Occupant's share of the Development Maintenance Costs shall be computed by multiplying the total amount of such costs by a fraction, the numerator of which shall be the total area of such Owner's or Occupant's Building Site and the denominator of which shall be the total area of the Building Sites located within the Property.

6.3 Assessment of Maintenance Charges. For each fiscal calendar year, Declarant shall estimate the Development Maintenance Costs and each Owner's or Occupant's pro rata share thereof, and each Owner or Occupant shall pay the total amount of such estimated share within thirty (30) days of receipt of the written notice. The pro-rate share shall commence on the first day of July following the date in which such Owner or Occupant acquires a Building Site and continuing so long as such Owner or Occupant owns or leases a Building Site. After the end of each fiscal year (or, at Declarant's option, at more frequent intervals), Declarant shall furnish each Owner or Occupant a statement in reasonable detail for the actual Development Maintenance Costs, reasonable detail for the actual Development

Rev 1 July 1, 2013

Horizon Center

Declaration of Covenants, Conditions and Restrictions

ARTICLE VI - PROPERTY AND COMMON AREA MAINTENANCE (cont.)

Maintenance Costs, prepared in accordance with sound accounting principles, and there shall be an adjustment between Declarant and each Owner or Occupant, with payment or repayment by Declarant, as the case may require, to the end that Declarant shall receive the entire amount of each Owner's or Occupant's share of the Development Maintenance Costs for such period.

6.4. Remedies for Nonpayment. In the event of an Owner's or Occupant's failure to pay such Owner's or Occupant's share of the Development Maintenance Costs within ten (10) days when due, the amount of such share shall be a lien against the Owner's or Occupant's Building Site to which the assessment applies upon the filing by Declarant of a lien which shall attach and become effective against such Owner's or Occupant's Building Site in the Register of Deeds Office for Roane County, Tennessee. Such lien may be enforced in law or in equity as in the case of any lien foreclosure. The assessments for Development Maintenance Costs shall accrue to the benefit of all property Owners or Occupants in the Property and Declarant, but may be enforced only by Declarant.

ARTICLE VII - OWNERS AND OCCUPANTS ASSOCIATION

There is hereby established the Property Owners and Occupants Association herein referred to as the "Association." Declarant and each Owner or Occupant in the Property shall be a member in the Association. Each Owner or Occupant shall be entitled to one-hundredth (1/100) vote in the Association for each acre of land owned or leased in the Property; however, any Owner may assign any vote to which such Owner or

Occupant is entitled to any Owner or Occupant on such terms as they may agree upon, and while any Owner or Occupant is entitled to a vote, such Owner or Occupant shall be deemed a member of the Association to the extent of the vote or votes assigned. Declarant shall be entitled to one-hundredth (1/100) vote in the Association for each acre of land in the Property excluding Building Sites subleased or sold to third parties.

The Association is formed to provide for the maintenance, improvement and beautification of Common Areas and Common Facilities of the Property and to undertake such other activities as are related to maintaining the Property as a desirable development for members of the Association. The Association shall, or shall cause to be organized a legal entity which shall be authorized to hold the title to or lease real property.

The Association or such legal entity or nominee shall accept and retain legal title to or lease those lands designated as Common Areas within the Property. Such legal entity or nominee shall hold such lease for the use and benefit of the members of the Association, and every member of the Association shall have a right and easement of joint enjoyment in and to the Common Areas and Common Facilities. As part of Common Area Maintenance, the Association shall be responsible for the maintenance and upkeep of such Common Areas and any Improvements thereon. The Association shall pay or arrange for payment directly by its members on an equitable basis for such utility services that may be required for street lighting, irrigation systems, sprinkler systems, and other uses in connection with such Common Areas. To the ends set forth hereinabove, the Association shall assess its members for Development Maintenance Costs as provided in Article VI. Each member of

<p>Rev 1 July 1, 2013</p>

Horizon Center

Declaration of Covenants, Conditions and Restrictions

ARTICLE VII - OWNERS AND OCCUPANTS ASSOCIATION (cont.)

the Association shall be fully liable for prompt payment of the necessary assessments for proper maintenance of the Common Areas.

The Association shall establish its own bylaws for the conduct of its affairs, which shall include reasonable notice to each member prior to any meeting. Decisions of the Association shall be by majority of votes cast at any meeting, except as otherwise provided herein.

ARTICLE VIII - EXTENSION OF DECLARATION TO ADJOINING REAL PROPERTY

If Declarant now owns or becomes the owner of real property contiguous to the Property (whether or not such properties are separated by any street, roadway, right-of-way, easement or Common Area), Declarant may at any time during the pendency of this Declaration add all or a portion of such real property to the Property. If Declarant wishes to extend this Declaration to adjoining real property, Declarant shall file of record a notice that such additional real property is made subject to this Declaration. Upon such recordation in Roane County, Tennessee, this Declaration shall run with the land already subject hereto and with the additional real property as if this Declaration had always applied to all of the additional real property from the inception hereof, and shall inure to the benefit of, and be binding upon, the Owners or Occupants of all such property, the Declarant, and any others having an interest therein, as Owners or Occupants or otherwise, their respective heirs, successors and assigns.

ARTICLE IX - CONFLICTS

Zoning restrictions and regulations, applicable building and inspection codes and regulations and any other governmental restrictions and requirements shall be observed, and in the event of any conflict between this Declaration and any such codes, regulations, restrictions and requirements, the provisions which require more restrictive standards shall apply.

ARTICLE X - EASEMENTS

Easements for the installation and maintenance of underground utilities, supply and transmission lines and drainage facilities are reserved by Declarant through all of the Property, excepting only areas within Building Sites on which Buildings are located or areas within Building Sites for which Plans and specifications for any Building have been approved by Declarant.

Such easements shall include the right of ingress and egress, provided that any damage to Property or Improvements thereon resulting from the installation, maintenance or repair of any underground utilities, supply and transmission lines or drainage facilities shall be repaired or replaced at the expense of Declarant or the authority which directed the activities causing the damage.

ARTICLE XI – ENFORCEMENT

Enforcement of the provisions of this Declaration shall be by the terms hereof or by any appropriate proceeding at law or in equity against any person, corporation or other entity violating or attempting to violate said provisions, either to restrain such violation, to enforce personal liability, or to recover damages, or by any appropriate proceeding at law or in equity against the land

Rev 1 July 1, 2013

Horizon Center

Declaration of Covenants, Conditions and Restrictions

ARTICLE XI – ENFORCEMENT (cont)

to enforce any lien or charge arising by virtue hereof. The failure of the Declarant, the Association, any Owner or Occupant to enforce any of the provisions of this Declaration shall in no event be deemed a waiver of the right to do so thereafter. Every Owner or Occupant shall be obligated to pay the attorney's fees of the party or parties bringing an action against each Owner or Occupant for the enforcement of the provisions of this Declaration; however, the prevailing party shall be entitled to recover its attorney's fees.

ARTICLE XII - COVENANTS AND RESTRICTIONS TO RUN WITH THE LAND

12.1 Binding Upon Successors and Assigns. The provisions of this Declaration contained in this instrument are not personal, but shall run with the land. Each and every one of these provisions is for the benefit of each Owner or Occupant, or any mortgagee or other interest therein, and each Owner or Occupant, by acceptance of a deed or a lease to a lot, parcel or tract of real property or a Building located within the Property (whether or not it shall be so expressed in such deed or other conveyance) accepts the same subject to the provisions and agrees for itself, successors and assigns to be bound by each of the provisions jointly and severally.

12.2 Privity of Contract and/or Estate. This Declaration will create privity of contract and/or estate with and among the Declarant, all grantees of any lot, parcel or tract of real property located on the Property, their heirs, successors, executors, administrators, representatives or assigns. Each Owner or Occupant shall be liable for matters ensuing during their respective period of ownership or occupancy.

12.3 Merger of Estates. This Declaration is binding upon the Declarant. In the event Declarant acquires fee simple title to the Property, the provisions of this Declaration shall become binding upon Declarant's fee simple title to the Property and shall inure to the benefit of and become binding upon any fee simple interest in the Property subsequently conveyed by Declarant.

ARTICLE XIII - MISCELLANEOUS

13.1 Severability. Each and every clause, sentence, provision and paragraph shall be considered to be an independent separate covenant and agreement and in the event any one or more shall for any reason be held to be inviolate or unenforceable, the remainder of this Declaration shall nevertheless remain in full force and effect.

13.2 Term and Extensions. The conditions, covenants, restrictions, easements and reservations set forth in this Declaration shall run with and bind the land within the Property, as well as any adjoining real property to which this Declaration is extended in accordance with Article VIII hereof and shall be and remain in effect, and shall inure to the benefit of, and be enforceable by Declarant, the Association or the Owner or Occupant of any property subject to this Declaration, their respective legal representatives, heirs, successors and assigns for a term of forty (40) years from the date this Declaration is recorded.

13.3 Amendment, Termination or Extension. This Declaration may be (i) amended from time to time, (ii) terminated, or (iii) renewed and extended in whole or in part beyond the

Rev 1 July 1, 2013

Horizon Center
Declaration of Covenants, Conditions and Restrictions

ARTICLE XIII – MISCELLANEOUS (cont.)

aforementioned terms for successive periods not to exceed ten (10) years each. Any of the foregoing shall be done by an instrument in writing, properly executed, acknowledged and filed with the Register of Deeds for Roane County, Tennessee, in accordance with the following provisions:

(a) If Declarant is an Owner or lessee of fifty percent (50%) or more of the total acreage of the Property, Declarant shall have the right to amend, terminate or extend this Declaration.

(b) If Declarant is an Owner or lessee of more than one percent (1%), but less than fifty percent (50%), of the total acreage of the Property, this Declaration may be amended, terminated or extended by Declarant and any remaining Owners or Occupants which together with Declarant own or lease fifty percent (50%) of the remaining acreage of the Property.

(c) If Declarant is neither an Owner nor lessee of any acreage in the Property, this Declaration may be amended, terminated or extended by the Owners or Occupants of two-thirds (2/3) of the total acreage of the Building Sites. Any extension shall specify which conditions, covenants, restriction, easements and reservations are renewed and extended and the term for which they are extended. Any such extension shall be filed for record at least ninety (90) days prior to the effective date thereof.

Declarant must receive approval from the Department of Energy – Oak Ridge Operations before granting a variance to the following: Article I – (m), (n); Article II – (vi); Article III – 3.1; Article IV – 4.1.2; Article V – 5.3.2, 5.9.2, 5.17, 5.18, 5.19, and 5.20; Article XIII – 13.3; Exhibits A, B1, B19, and E.

Each purchaser, lessee or grantee of any interest in any real property now or hereafter made subject to this Declaration, by acceptance of a deed or other conveyance thereof, thereby agrees that the conditions, covenants, restrictions, easements and reservations of this Declaration are applicable to such property and that they may be amended, terminated or extended as provided above.

13.4 Modification, Amendment, or Release. Except as provided in Paragraph 13.2, any Owner of all or any portion of the Property is hereby put on notice that this instrument may be released, subordinated, modified, rescinded or amended without the necessity of obtaining its consent.

IN WITNESS WHEREOF, the parties have caused this instrument to be executed on the day and year first above written.

DECLARANT:

THE INDUSTRIAL DEVELOPMENT BOARD
OF THE CITY OF OAK RIDGE, TENNESSEE



By: David Wilson
Title: Chairman

Book 1487 Page 830

Rev 1 July 1, 2013

Horizon Center
Declaration of Covenants, Conditions and Restrictions

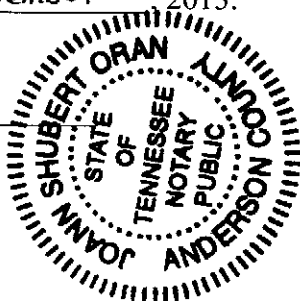
STATE OF TENNESSEE)

COUNTY OF ANDERSON)

Before me, the undersigned, a Notary Public in and for the state and county aforesaid, personally appeared David Wilson, with whom I am personally acquainted, or proved to me on the basis of satisfactory evidence, and who, upon oath, acknowledged himself to be the Chairman of THE INDUSTRIAL DEVELOPMENT BOARD OF THE CITY OF OAK RIDGE, TENENSSEE, the within named bargainor, a corporation, and that he or she, as such Chairman, being authorized so to do, executed the foregoing instrument for the purposes therein contained, by signing the name of the board by himself David Wilson.

Witness my hand and seal on this the 11th day of November, 2013.

Joann Shubert Oran
Notary Public



My Commission Expires: Jan. 27, 2014

Book 1487 Page 831

Rev 1 July 1, 2013

Horizon Center
Declaration of Covenants, Conditions and Restrictions

EXHIBITS

Exhibit A – Property

Exhibit B – Design Evaluation Criteria

Exhibit C – Exterior Lighting

Exhibit D - Plant Lists

Exhibit E – Sensitive Resources within the Natural Area

RELATED DOCUMENTS Under Separate Cover

Horizon Center Development Plan

City of Oak Ridge Design Guidelines

City of Oak Ridge Zoning Ordinance

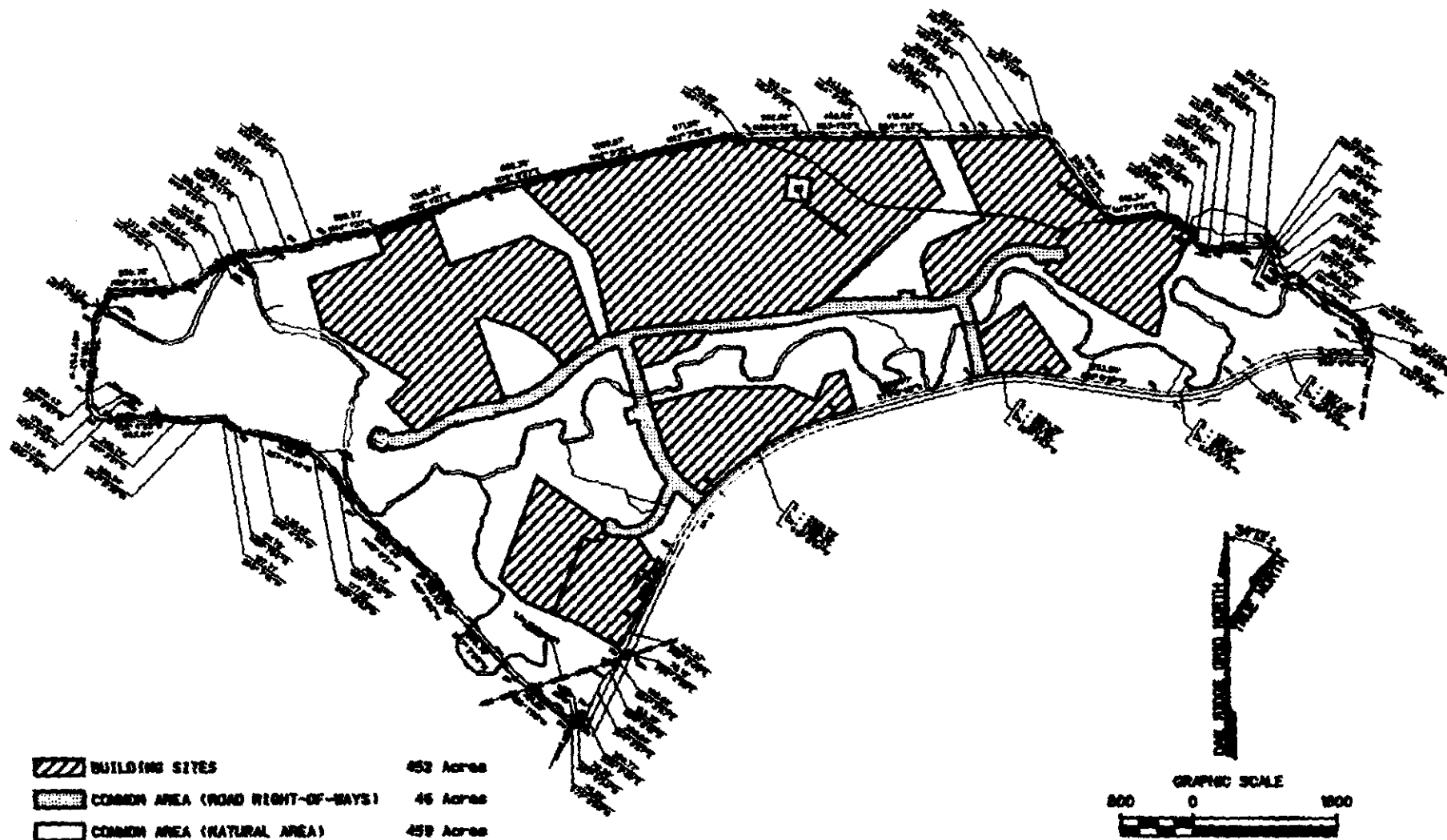
Book 1487 Page 832

Rev 1 – July 1, 2013

Horizon Center

Property – EXHIBIT A

Book 1487 Page 833



Rev 1 – July 1, 2013

Horizon Center
Design Evaluation Criteria – EXHIBIT B

3 = Plan Submittal Is Acceptable or Design Is Above and Beyond Adequate
 2 = Design Is Adequate
 1 = Design Is Marginally Acceptable
 0/A = Plan Submittal Missing
 0/B = Design Is Not Acceptable
 0/C = Design Does Not Merit Points

3 2 1 0

Submittals for Design Evaluation **Review Comments**

SUBMITTALS - two (2) copies of preliminary drawings and written information noted below are required for project review. Submittal of one (1) set of completed construction documents is required for final approval. Applicable Regulatory Agency Requirements shall be met or approved by special exception or waiver by applicable agency(with concurrence of IDB).

All drawings and written information required by this section shall be submitted prior to design review

1.	Site Plan	Required – Include site boundaries; preliminary grading showing extent of encroachment into existing tree lines, building(s) outlines; paved parking, drives and services areas; curbing; location of ground signs; location of major exterior site equipment and above-ground utilities; screen walls				
2.	Landscaping Plan	Required – Include planting plan; plant species, visual screening; irrigation types and locations				
3.	Building Floor Plans	Required – Include overall building dimensions – interior layout not required				
4.	Building Roof Plans	Required – Include indication of roof-top equipment and proposed screening				
5.	Building Elevations (rendered in color with shadowing)	Required – Include material designations; wall and opening configurations; roof-top screen-walls as applicable				
6.	Perspective Drawing (rendered in color)	Optional – Include principal view of building viewed from main approach				
7.	Exterior Signage Description	Required – Include written description of signage types, sizes colors, copy to be used on signs				

Book 1487 Page 834

Rev 1 – July 1, 2013

**Horizon Center
Design Evaluation Criteria – EXHIBIT B**

3 = Plan Submittal Is Acceptable or Design Is Above and Beyond Adequate
 2 = Design Is Adequate
 1 = Design Is Marginally Acceptable
 0/A = Plan Submittal Missing
 0/B = Design Is Not Acceptable
 0/C = Design Does Not Merit Points

3 2 1 0

8.	Exterior Lighting Description	Required – Include written description of lighting type (color corrected high-pressure sodium), design selection (see EXHIBIT C)					
9.	Written Summary Description of Project	Required – Include operational characteristics; employee and customer count; shifts; architectural features					
10.	Color Board	Optional – Include exterior material and color samples					
11.	Architectural Models and/or Computer Simulations	Optional – May be used as substitute for Building Elevations provided that material and color selections are adequately indicated					
		Subtotal					24 Points Required for Items 1 through 11

Documents Referenced in Restrictive Covenants

12.	City of Oak Ridge Zoning Ordinance	Compliance required – Includes development density; property line setbacks; parking requirements; buffer requirements; signage regulations; other – Note: requests for Variances or Special Exceptions require prior consent of IDB					
13.	Horizon Center Exterior Lighting Systems (EXHIBIT C)	Compliance required – Light poles and fixtures include one of the types and styles specified in EXHIBIT C					
14.	Horizon Center Plant Lists (EXHIBIT D)	Compliance Recommended – Avoid use of Invasive Exotic Pest Plants					
15.	Horizon Center Design Evaluation Criteria	For Information					
16.	Horizon Center Development Plan	Compliance required					

Book 1487 Page 835

Rev 1 – July 1, 2013

Horizon Center
Design Evaluation Criteria – EXHIBIT B

3 = Plan Submittal Is Acceptable or Design Is Above and Beyond Adequate
 2 = Design Is Adequate
 1 = Design Is Marginally Acceptable
 0/A = Plan Submittal Missing
 0/B = Design Is Not Acceptable
 0/C = Design Does Not Merit Points

3 2 1 0

17.	City of Oak Ridge Design Guidelines	Compliance recommended – Includes landscaping recommendations; other recommendations pertaining to visual attractiveness of site improvements					
18.	Not Used						

Design Requirements and Principal Objectives

Site Design		Review of Site and Landscaping Plans, Exterior Signage and Lighting Descriptions					
19.	Installation of Trees, Shrubs, Flower Beds, Ground Cover – Article 5.3	Extent of planting – Includes effective visual screening of utilitarian areas; effective installation for attractive visual effect from predominant views of facility; effective planting in parking areas; types of vegetation are suitable to region, and landscaping is well integrated with building and design features					
20.	Installation Of Natural Stone Accent Features	Use of stacked stone masonry at landscaping walls and borders and sign bases in accordance with design precedent set in Horizon Center Common Areas					
21.	Retention Of Existing Trees – Article 5.3	Extent of special measures taken to preserve existing trees larger than 5-inch caliper					<i>6 Points Required for Items 19 through 21</i>
22.	Automatic Irrigation System for Planting Beds – Article 5.9	Required – Planting beds for trees, shrubs and flowering plants are provided with underground automatic irrigation system					

Book 1487 Page 836

Rev 1 – July 1, 2013

Horizon Center
Design Evaluation Criteria – EXHIBIT B

3 = Plan Submittal Is Acceptable or Design Is Above and Beyond Adequate
 2 = Design Is Adequate
 1 = Design Is Marginally Acceptable
 0/A = Plan Submittal Missing
 0/B = Design Is Not Acceptable
 0/C = Design Does Not Merit Points

3 2 1 0

23.	Service Area Screening – Article 5.7	Required – Service, storage, utility and equipment yards and refuse disposal areas are effectively screened with walls of materials that are compatible with principal structures, and/or trees and shrubs and earthen berms are installed to provide initial 80-percent opacity					
24.	Exterior Signage – Article 5.11	Required – Exterior signage system is planned in accordance with Horizon Center signage system					
25.	Exterior Lighting – Article 5.13	Required – Parking areas, driveways and pedestrian circulation is illuminated using one of the lighting systems specified in EXHIBIT C					
Building Design		Review of Building Plans and Elevations					
26.	Exterior Wall Materials – Article 5.1	Required – Use of principal materials - natural stone masonry, articulated concrete panels, brick, architectural concrete masonry using combination of colored and textured units, or a combination of principal use materials at all exterior walls having visual exposure from neighboring Building Sites, Common Areas or public streets - includes supplemental use of composite metal wall system panels in accordance with Article 5.1					

Book 1487 Page 837

Rev 1 – July 1, 2013

Horizon Center
Design Evaluation Criteria – EXHIBIT B

3 = Plan Submittal Is Acceptable or Design Is Above and Beyond Adequate
 2 = Design Is Adequate
 1 = Design Is Marginally Acceptable
 0/A = Plan Submittal Missing
 0/B = Design Is Not Acceptable
 0/C = Design Does Not Merit Points

3 2 1 0

27.	Exterior Wall Materials and Colors – Article 5.10	Required – Predominant use of colors that harmonize with the natural surroundings within Horizon Center – accent colors shall not be used to the extent that undue contrast or brightness detracts from the natural surroundings						
28.	Roof or Building-Mounted Mechanical Equipment – Article 5.12	Required – Screened from view from ground level and from surrounding Building Sites either by removal from line-of-sight; or use of screen walls, penthouses, or landscape schemes as appropriate						
Subtotal								27 Points Required for Items 19 through 28

Design Preferences and Other Objectives

Site Design		Review of Landscaping and Site Plans					
29.	Automatic Irrigation System for Lawn Areas	Extent of lawn area automatic irrigation					
30.	Service Area Screening	As a screening enhancement, service and storage yards and refuse disposal areas are located on opposite side of building(s) from main facility entrance drives and/or Horizon Center public roadways					
31.	Concrete Curbing	Extent of concrete curbing along roadways and at perimeter of parking areas and landscape islands - preference is for all paved areas to have curbing					

Book 1487 Page 838

Rev 1 – July 1, 2013

Horizon Center
Design Evaluation Criteria – EXHIBIT B

3 = Plan Submittal Is Acceptable or Design Is Above and Beyond Adequate
 2 = Design Is Adequate
 1 = Design Is Marginally Acceptable
 0/A = Plan Submittal Missing
 0/B = Design Is Not Acceptable
 0/C = Design Does Not Merit Points

3 2 1 0

32.	Sidewalks Extended from Facility Entrances to Existing Roadway Sidewalks	The design of the project promotes and facilitates pedestrian circulation within Horizon Center					
33.	Landscape design utilizes plants from the list of Native Plant Recommendations of the Tennessee Exotic Pest Plant Council, and avoids use of plants on the Council's list of Invasive exotic Pest Plants in Tennessee	Project landscaping design is consistent with the environmental management objectives of Horizon Center					
34.	Special Site Features	Project incorporates special site elements such as water-features; special aggregate paving for sidewalks; particularly extensive addition of native trees, shrubs or flowering plants; extensive use of landscaping at any required storm water detention basin; special walkway lighting such as bollards; or outdoor seating/gathering areas for employees					
Building Design		Review of Building Plans and Elevations					
35.	Exterior Wall Materials – Articles 5.1 and 5.10	Minimal use of approved supplemental exterior wall materials at façades with limited visual exposure from neighboring Building Sites, Common Areas, or public streets, i.e., metal wall panel systems and/or painted concrete block					

Book 1487 Page 839

Rev 1 – July 1, 2013

**Horizon Center
Design Evaluation Criteria – EXHIBIT B**

3 = Plan Submittal Is Acceptable or Design Is Above and Beyond Adequate
 2 = Design Is Adequate
 1 = Design Is Marginally Acceptable
 0/A = Plan Submittal Missing
 0/B = Design Is Not Acceptable
 0/C = Design Does Not Merit Points

3 2 1 0

36.	Sloped Roof Areas	Sloped roofs exposed to view from ground-level utilize standing seam metal system with use of color that harmonizes with the natural surroundings within Horizon Center, and is in accordance design precedent set in Horizon Center Common Areas					
37.	Special Building Features	Project incorporates special building elements such as architectural features that enhance the development objectives of Horizon Center as a high quality business/industrial center					
		Subtotal					19 Points Required for Items 29 through 37
		Total Value Points Scored					=
		Total Value Points Required – Items 1 through 37					= 70

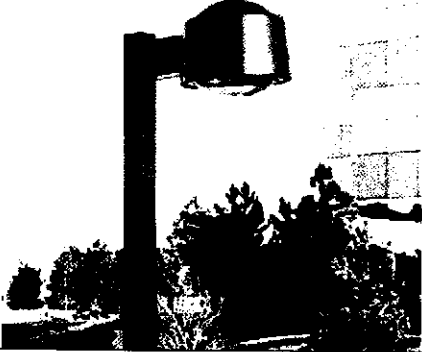
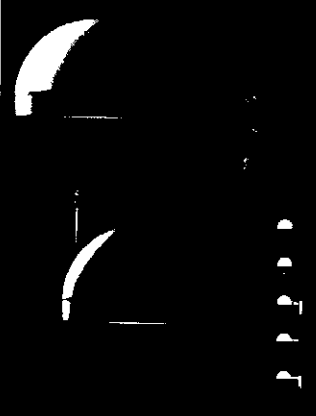
Book 1487 Page 840

Rev 1 – July 1, 2013

Horizon Center
Exterior Lighting – EXHIBIT C

Selection of Exterior Lighting

Owners or Occupants shall select one or more of the exterior lighting systems below for Building Site lighting. Refer to Article 5.13 of Declaration of Covenants, Conditions and Restrictions for general requirements. Substitution of close equivalent fixtures by other manufacturers shall be allowed only by written approval of Declarant. It is recommended that exterior lighting be designed in accordance with recommendations of the International Dark Sky Association – <http://www.darksky.org>


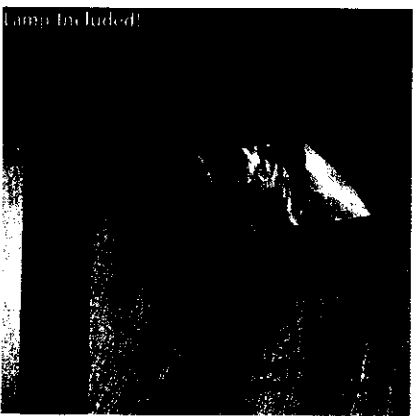
	Manufacturer	Product, Style, Options	Catalog Photo
1.	Holophane Corporation 214 Oakwood Avenue Newark, OH 43055	PoleStar – Aquila Series – Linear Arm Mounting for one, two, three or four fixtures with cut-off photometrics	
2.	McGraw-Edison Cooper Industries, Inc. P.O. Box 820824 Vicksburg, MS 391182-0824 P 601-634-9606	Architectural HID Outdoor Lighting - Credenza Series – post-top spider mount, or one, two, three or four fixture arm mount with cut-off photometrics – non-luminous tops only	

Book 1487 Page 841

Rev 1 – July 1, 2013

Horizon Center
Exterior Lighting – EXHIBIT C

Selection of Exterior Lighting

	Manufacturer	Product, Style, Options	Catalog Photo
3.	Kim Lighting P.O. Box 1275 16555 East Gale Avenue Industry, CA 91749 P – 818-968-5666	Outdoor Lighting – Archetype Model AR, and/or Model SAR - one, two, three or four fixture arm mount with cut-off photometrics	
4.	Ruud Lighting, Inc. 9201 Washington Avenue Racine, WI 53406-3772 P – 800-236-7000	Outdoor Parking/Roadway, Area Cut-off Lighting – AC Series – arm-mounted with cut-off photometrics	

Book 1487 Page 842

Rev 1 – July 1, 2013

Owners and Occupants are encouraged to use plants in the following list. See Page 9 for list of plants to avoid.

Native Plant Recommendations

KEY	LIGHT	SOIL MOISTURE	SOIL pH
	F = full sunlight	H = hydric; wet, plants periodically or often inundated by water	B = basic; prefers limestone
	P = partial shade	M = mesic; moist, adequate soil moisture retention year-round	A = acidic; prefers acidic soils
	S = shade	S = sub-xeric; moist to dry, seasonally moist, periodically dry	* = restricted to either B or A
		X = xeric; dry & drought resistant, little moisture retention, excessively drained	

COMMON NAME	SCIENTIFIC NAME	LIGHT	MOISTURE	SOIL pH
SHRUBS				
alder	<i>Alnus serrulata</i>	F, P	H, M	B, A
serviceberry	<i>Amelanchier laevis</i>	F, P	M, S	A
indigobush	<i>Amorpha fruticosa</i>	F, P	M, S, X	B, A
red chokeberry	<i>Aronia arbutifolia</i>	F, P	H, M., S	A
black chokeberry	<i>Aronia melanocarpa</i>	F, P	H, M, S, X	A
sweetshrub	<i>Calycanthus floridus</i>	P	H, S	A
American beautyberry	<i>Callicarpa americana</i>	F, P	H, M, S, X	B, A
New Jersey tea	<i>Ceanothus americanus</i>	P, S	M, S, X	A*
buttonbush	<i>Cephalanthus occidentalis</i>	F, P	H	B, A
Cumberland rosemary	<i>Condradina verticillata</i>	P	M, S	A
hazelnut	<i>Corylus americana</i>	F, P, S	M, S	B, A
leatherwood	<i>Dirca palustris</i>	F, P, S	M	B, A
hearts-a-bustin	<i>Euonymus americana</i>	P, S	M	B, A
swamp mallow	<i>Hibiscus moscheutos</i>	F, P	H	B, A
wild hydrangea	<i>Hydrangea arborescens</i>	P, S	M, X	B, A
golden St. John's wort	<i>Hypericum frondosum</i>	F, P	M, X	B*
shrubby St. John's wort	<i>Hypericum prolificum</i>	F, P	H, M, S, X	B, A
common winterberry	<i>Ilex verticillata</i>	F, P, S	H, M	A

Horizon Center

Plant Lists – EXHIBIT D

Rev 1 – July 1, 2013

Virginia willow	<i>Itea virginica</i>	F, P, S	H, M	B, A
mountain laurel	<i>Kalmia latifolia</i>	F, P	S, X	A*
spicebush	<i>Lindera benzoin</i>	F, P	M	B, A
ninebark	<i>Physocarpus apulifolius</i>	F, P	H, M, X	B, A
flame azalea	<i>Rhododendron calendulaceum</i>	P, S	N, S	A*
wild azalea	<i>Rhododendron canescens</i>	P, S	M, S	A*
rosebay	<i>Rhododendron maximum</i>	P, S	M, S	A*
fragrant sumac	<i>Rhus aromatica</i>	F, P	S, X	B*
winged sumac	<i>Rhus copallina</i>	F, P	S, X	B, A
Carolina rose	<i>Rosa carolina</i>	F, P	M, S	B
swamp rose	<i>Rosa palustris</i>	F, P	H, M	B, A
elderberry	<i>Sambucus canadensis</i>	F, P, S	M	B
bladdernut	<i>Staphlea trifolia</i>	P, S	M, S	B
coralberry	<i>Symphoricarpus orbiculatus</i>	F, P, S	M, S, X	B, A
farkleberry	<i>Vaccinium arboreum</i>	F, P	S, X	A*
highbush blueberry	<i>Vaccinium corymbosum</i>	F, P	S, X	A*
cranberry	<i>Vaccinium macrocarpon</i>	F, P	H, M	A*
deerberry	<i>Vaccinium stamineum</i>	F, P	M, S, X	A*
mapleleaf viburnum	<i>Viburnum acerifolium</i>	P, S	M, S, X	A
SMALL TREES				
serviceberry	<i>Amelanchier arborea</i>	F, P, S	S, X	A
Hercules club	<i>Aralia spinosa</i>	F, P	S, X	B, A
pawpaw	<i>Asimina triloba</i>	P, S	M	B
ironwood	<i>Carpinus caroliniana</i>	P, S	H, M	B, A
redbud	<i>Cercis canadensis</i>	F, P, S	M, S, X	B
fringetree	<i>Chionanthus virginicus</i>	P, S	M, S	A
alternate-leaved dogwood	<i>Cornus alternifolia</i>	P, S	M, S	A
flowering dogwood	<i>Cornus florida</i>	P, S	M, S	B, A
parsley hawthorn	<i>Crataegus marshalii</i>	F, P	S, X	B
hawthorn	<i>Crataegus mollis</i>	F, P	S, X	B
Washington hawthorn	<i>Crataegus phaenopyrum</i>	F, P	S, X	B
Carolina silverbell	<i>Halesia carolina</i>	F, P, S	M, S	A

Horizon Center

Plant Lists – EXHIBIT D

Rev 1 – July 1, 2013

witch-hazel	<i>Hamamelis virginiana</i>	P, S	M, S	A
American holly	<i>Ilex opaca</i>	F, P, S	M, S	A
sweetbay magnolia	<i>Magnolia virginiana</i>	P, S	M, S	A
hop hornbeam	<i>Ostrya virginiana</i>	P, S	M, S	B
sourwood	<i>Oxydendrum arboreum</i>	P, S	S, X	A*
American plum	<i>Prunus americana</i>	F, P	S, X	B, A
Carolina buckthorn	<i>Rhamnus caroliniana</i>	F, P, S	S, X	B
staghorn sumac	<i>Rhus typhina</i>	F, P	S, X	A
mountain ash	<i>Sorbus americana</i>	F, P	H, M, S	A
southern rusty blackhaw	<i>Viburnum rufidulum</i>	F, P, S	M, S, X	B
northern blackhaw	<i>Viburnum prunifolium</i>	F, P, S	M, S, X	B, A
TREES				
red maple	<i>Acer rubrum</i>	F, P, S	H, S, X	A
silver maple	<i>Acer saccharinum</i>	F, P	H	B, A
sugar maple	<i>Acer saccharum</i>	F, P, S	M, S	B
yellow buckeye	<i>Aesculus flava</i>	P, S	M, S	B, A
black birch	<i>Betula lenta</i>	F, P, S	M, S, X	B, A
river birch	<i>Betula nigra</i>	F, P, S	H, M	B, A
bitternut hickory	<i>Carya cordiformis</i>	F, P, S	M	B
pignut hickory	<i>Carya glabra</i>	F, P, S	S, X	B, A
shagbark hickory	<i>Carya ovata</i>	F, P, S	S, X	B
mockernut hickory	<i>Carya tomentosa</i>	F, P, S	M, S, X	B, A
yellow-wood	<i>Cladrastis lutea</i>	F, P, S	M, S	B
persimmon	<i>Diospyros virginiana</i>	F, P	M, S	B, A
American beech	<i>Fagus grandifolia</i>	F, P, S	M, S	B, A
white ash	<i>Fraxinus americana</i>	F, P, S	M, S	B
green ash	<i>Fraxinus pennsylvanica</i>	F, P, S	H, M, S, X	B, A
blue ash	<i>Fraxinus quadrangulata</i>	F, P, S	M, S	B*
black walnut	<i>Juglans nigra</i>	F, P, S	M, S	B
red cedar	<i>Juniperus virginiana</i>	F, P	S, X	B
sweetgum	<i>Liquidambar styraciflua</i>	F, P, S	H, M, S, X	A
tulip poplar	<i>Liriodendron tulipifera</i>	F, P	M, S	B, A

Rev 1 – July 1, 2013

Horizon Center

Plant Lists – EXHIBIT D

blackgum	<i>Nyssa sylvatica</i>	F, P, S	S, X	A
cucumber tree	<i>Magnolia acuminata</i>	P, S	M	B, A
red mulberry	<i>Morus rubra</i>	F, P, S	M, S, X	B, A
shotleaf pine	<i>Pinus echinata</i>	F	S, X	A
white pine	<i>Pinus strobus</i>	F	M, S	A
sycamore	<i>Platanus occidentalis</i>	F, P	H, M	B
black cherry	<i>Prunus serotina</i>	F, P	M, S, X	B, A
white oak	<i>Quercus alba</i>	F, P	M, S, X	B, A
scarlet oak	<i>Quercus coccinea</i>	F, P	S, X	A*
southern red oak	<i>Quercus falcata</i>	F, P	S, X	B, A
water oak	<i>Quercus nigra</i>	F, P	H, M	B, A
pin oak	<i>Quercus palustris</i>	F, P	H, M, S, X	B, A
chestnut oak	<i>Quercus prinus</i>	F, P	S, X	A*
northern red oak	<i>Quercus rubra</i>	F, P	H, M, S	B, A
post oak	<i>Quercus stellata</i>	F, P	S, X	B, A
black willow	<i>Salix nigra</i>	F, P	H	B
sassafras	<i>Sassafras albidum</i>	F, P	M, S	B, A
white cedar	<i>Thuja occidentalis</i>	P, S	H, M, S	B
basswood	<i>Tilia americana</i>	F, P, S	M, S	B, A
VINES				
dutchman's pipe	<i>Aristolochia macrophylla</i>	F, P	M, S	B, A
crossvine	<i>Bignonia capreolata</i>	F, P	H, M, S	B, A
trumpet creeper	<i>Campsis radicans</i>	F, P	S, X	B, A
leatherflower	<i>Clematis viorna</i>	F, P, S	M, S, X	B, A
virgin's bower	<i>Clematis virginiana</i>	F, P, S	M, S, X	B, A
climbing hydrangea	<i>Decumaria barbara</i>	F, P	H, M	B, A
Carolina jasmine	<i>Gelsemium sempervirens</i>	F, P	M, S	A
Virginia creeper	<i>Parthenocissus quinquefolia</i>	F, P, S	M, S, X	B, A
passionflower	<i>Passiflora incarnata</i>	F, P	S, X	B, A
Atlantic wisteria	<i>Wisteria frutescens</i>	P, S	H, M, S	B, A
FERNS				
lady fern	<i>Athyrium filix-femina</i>			

Horizon Center

Plant Lists – EXHIBIT D

Rev 1 – July 1, 2013

sensitive fern	<i>Onoclea sensibilis</i>
cinnamon fern	<i>Osnumda cinnamomea</i>
chain fern	<i>Woodwardia areolata</i>
maidenhair fern	<i>Adiantum pedatum</i>
ebony spleenwort	<i>Asplenium platyneuron</i>
Christmas fern	<i>Polystichum acrostichoides</i>
common grape fern	<i>Botrychium dissectum</i>
broad beech fern	<i>Phegopteris hexagonaptera</i>
common woodsia	<i>Woodsia obtusa</i>
GRASSES AND SEDGES	
big bluestem	<i>Andropogon gerardii</i>
splitbeard bluestem	<i>Andropogon ternarius</i>
broomsedge	<i>Andropogon virginicus</i>
river cane	<i>Arundinaria gigantea</i>
plantain-leaved sedge	<i>Carex plantaginea</i>
river oats, spangle grass	<i>Chasmanthium latifolium</i>
oat grass	<i>Danthonia compressa</i>
Canada wild rye	<i>Elymus canadensis</i>
sugarcane plumegrass	<i>Erianthus gigantea</i>
narrow plumegrass	<i>Erianthus strictus</i>
bottlebrush grass	<i>Hystrix patula</i>
switchgrass	<i>Panicum virgatum</i>
Indian grass	<i>Sorghastrum nutans</i>
GROUND COVERS	
hog peanut	<i>Amphicarpaea bracteata</i>
pussy toes	<i>Antennaria plantaginifolia</i>
wild ginger	<i>Asarum canadense</i>
mouse-eared coreopsis	<i>Coreopsis auriculata</i>
rattlesnake plantain	<i>Goodyera pubescens</i>
dwarf crested iris	<i>Iris cristata</i>
partridge berry	<i>Mitchella repens</i>
Allegheny spurge	<i>Pachysandra procumbens</i>

Horizon Center

Plant Lists – EXHIBIT D

Rev 1 – July 1, 2013

phacelia	<i>Phacelia bipinnatifida</i>
chalice phlox	<i>Phlox amoena</i>
Carolina phlox	<i>Phlox carolina</i>
wild blue phlox	<i>Phlox divaricata</i>
downy phlox	<i>Phlox pilosa</i>
creeping phlox	<i>Phlox stolonifera</i>
foamflower	<i>Tiarella cordifolia</i>
verbena	<i>Verbena canadensis</i>
FLOWERS	
doll's eyes	<i>Actaea alba</i>
blue star	<i>Amsonia tabernaemontana</i>
thimbleweed	<i>Anemone virginiana</i>
wild columbine	<i>Aquilegia canadensis</i>
green dragon	<i>Arisaema dracontium</i>
jack-in-the-pulpit	<i>Arisaema triphyllum</i>
goats-beard	<i>Aruncus dioicus</i>
swamp milkweed	<i>Asclepias incarnata</i>
butterfly weed	<i>Asclepias tuberosa</i>
white wood aster	<i>Aster divaricatus</i>
showy aster	<i>Aster grandiflorus</i>
late purple aster	<i>Aster patens</i>
false goatsbeard	<i>Astilbe biternata</i>
blue wild indigo	<i>Baptisia australis</i>
marsh marigold	<i>Caltha palustris</i>
blue cohosh	<i>Caulophyllum thalictroides</i>
pink turtlehead	<i>Chelone lyonii</i>
whorled tickseed	<i>Coreopsis major</i>
wild bleeding heart	<i>Dicentra eximia</i>
shooting star	<i>Dodecatheon meadia</i>
purple coneflower	<i>Echinacea purpurea</i>
wild ageratum	<i>Eupatorium coelestinum</i>
Joe-Pye weed	<i>Eupatorium fistulosum</i>

Horizon Center

Plant Lists – EXHIBIT D

Rev 1 – July 1, 2013

wild geranium	<i>Geranium maculatum</i>
Maximillian sunflower	<i>Helianthus maximilianii</i>
sharp-lobed hepatica	<i>Hepatica acutiloba</i>
alumroot	<i>Heuchera americana</i>
spotted jewelweed	<i>Impatiens capensis</i>
blue flag	<i>Iris versicolor</i>
dense blazing star	<i>Liatris spicata</i>
Turks-cap lily	<i>Lilium superbum</i>
cardinal flower	<i>Lobelia cardinalis</i>
Virginia bluebells	<i>Mertensia virginica</i>
bishop's cap	<i>Mitella diphylla</i>
ginseng	<i>Panax quinquefolius</i>
phlox	<i>Phlox maculata</i>
garden phlox	<i>Phlox paniculata</i>
Jacob's ladder	<i>Polemonium reptans</i>
Solomon's seal	<i>Polygonatum biflorum</i>
black-eyed susan	<i>Rudbeckia fulgida</i>
fire pink	<i>Silene virginica</i>
rough-stemmed goldenrod	<i>Solidago rugosa</i>
spiderwort	<i>Tradescantia virginiana</i>
tall ironweed	<i>Vernonia altissima</i>
bird-foot violet	<i>Viola pedata</i>
long-spurred violet	<i>Viola rostrata</i>
MOSAIC FOR FULL SUN	
big bluestem	<i>Andropogon gerardii</i>
butterfly weed	<i>Asclepia tuberosa</i>
river oats	<i>Chasmanthium latifolium</i>
joe-pye weed	<i>Eupatorium dubium</i>
Carolina jessamine	<i>Gelsemium sempervirens</i>
phlox	<i>Phlox spp.</i>
black-eyed susan	<i>Rudbeckia fulgida</i>
Indian grass	<i>Sorghastrum nutans</i>

Rev 1 – July 1, 2013

Horizon Center
Plant Lists – EXHIBIT D

MOSAIC FOR SHADE

jack-in-the-pulpit	<i>Arisaema triphyllum</i>
Dutchman's pipe	<i>Aristolochia macrophylla</i>
wild ginger	<i>Asarum canadense</i>
river oats	<i>Chasmanthium latifolium</i>
sharp-lobed hepatica	<i>Hepatica acutiloba</i>
alumroot	<i>Heuchera americana</i>
cinnamon fern	<i>Osmunda cinnamomea</i>
Solomon's seal	<i>Polygonatum biflorum</i>
Christmas fern	<i>Polystichum acrostichoides</i>
violets	<i>Viola</i> spp.

Rev 1 – July 1, 2013

Invasive Exotic Pest Plants in Tennessee

Developed by the Research Committee
of the Tennessee Exotic Pest Plant Council
June 1996

Nomenclature and authorship taken from Wofford, B.E. and R. Kral. 1993. *Checklist of the vascular plants of Tennessee*. Sida, Botanical Miscellany No. 10; or Kartez, J.T. 1994. *A synonymized checklist of the vascular flora of the United States, Canada, and Greenland*. Second edition. Timber Press. RANK 1. "SEVERE THREAT"

Exotic plant species which possess characteristics of invasive species and spread easily into native plant communities and displace native vegetation; includes species which are or could become widespread in Tennessee.

Ailanthus altissima (Mill.) Swingle - tree of heaven
Alliaria petiolata (M. Bieb.) Cavara & Grande - garlic-mustard
Arthraxon hispidus (Thunb.) Makino - hairy jointgrass
Carduus nutans L. - musk thistle, nodding thistle
Elaeagnus umbellata Thunb. - autumn olive
Evonymus fortunei (Turcz.) Hand.-Mazz. - wintercreeper
Hydrilla verticillata (L.f.) Royle - hydrilla
Lespedeza cuneata (Dum. Cours.) G. Don - sericea lespedeza
Ligustrum sinense Lour. - privet
Ligustrum vulgare L. - common privet
Lonicera japonica Thunb. - Japanese honeysuckle

Lonicera maackii (Rupr.) Maxim. - Amur bush honeysuckle
*Lonicera morrowii A. Gray - Morrow's bush honeysuckle
Lythrum salicaria L. [all vars. and cultivars] - purple loosestrife
Microstegium vimineum (Trin.) A. Camus - Nepalgrass, Japanese grass
Myriophyllum spicatum L. - Eurasian watermilfoil
Paulownia tomentosa (Thunb.) Steud. - princess tree
**Phalaris arundinacea L. - canary grass
**Phragmites australis (Cav.) Trin. ex Steud. - common reed
Polygonum cuspidatum Seib. & Zucc. - Japanese knotweed, Japanese bamboo
Pueraria lobata (Willd.) Ohwi - kudzu
Rosa multiflora Thunb. ex Murray - multiflora rose
Solanum viarum Dunal - tropical soda apple
Sorghum halepense (L.) Pers. - Johnson grass

RANK 2. "SIGNIFICANT THREAT"

Exotic plant species which possess some invasive characteristics, but have less impact on native plant communities; may have the capacity to invade natural communities along disturbance corridors, or to spread from stands in disturbed sites into undisturbed areas, but have fewer characteristics of invasive species than RANK 1 above.

Albizia julibrissin Durazz. - mimosa
Allium vineale L. - field garlic
Alternanthera philoxeroides (Mart.) Griseb. - alligatorweed
Artemisia vulgaris L. - mugwort
Arundo donax L. - giant reed, elephant grass
Berberis thunbergii DC. - Japanese barberry
Bromus inermis Leyss. - Hungarian brome grass
Bromus japonicus Thunb. ex Murray - Japanese brome grass
Bromus secalinus L. - brome grass

Horizon Center

Plant Lists – EXHIBIT D

Rev 1 – July 1, 2013

Bromus tectorum L. - thatch brome
Celastrus orbiculatus Thunb. - Asian bittersweet
Centaurea maculosa Lam. - spotted knapweed
Chrysanthemum leucanthemum L. - ox-eye daisy
Cirsium arvense L. (Scop.) - Canada thistle
Cirsium vulgare (Savi) Ten. - bull thistle
Clematis terniflora DC. - leatherleaf clematis
Coronilla varia L. - crown vetch
Dioscorea batatas Decne. - air-potato
Dipsacus fullonum L. - Fuller's teasel
Egeria densa Planch. - Brazilian elodea
Elaeagnus pungens Thunb. - Russian olive
Evonymus alata (Thunb.) Sieb. - burning bush
Festuca pratensis Huds. - tall fescue
Hedera helix L. - English ivy
Hesperis matronalis L. - dame's rocket
Lespedeza bicolor Turcz. - bicolor lespedeza
Lonicera fragrantissima Lindl. & Paxton - January jasmine
Ludwigia uruguayensis (Camb.) H. Hara - hairy water-primrose
Lysimachia nummularia L. - moneywort
Melilotus alba Medik. - white sweet clover
Melilotus officinalis (L.) Pall. - yellow sweet clover
Miscanthus sinensis Anderss. - zebra grass
Mosla dianthera (Buchenau) Maxon - miniature beefsteak
Murdannia keisak (Hassk.) Hand.- Mazz. - Asian spiderwort
Myriophyllum aquaticum (Vell.) Verdc. - parrotfeather, watermilfoil
Nasturtium officinale R.Br. - watercress
Polygonum caespitosum Blume - bunchy knotweed
 *Polygonum sachalinense F. Schmidt ex Maxim.
Potamogeton crispus L. - curly pondweed

Setaria pumila (Poir.) Roem. & Schult. - smooth millet
Setaria viridis (L.) P. Beauv. - green millet
Spiraea japonica L.f. - Japanese spiraea
Torilis arvensis (Huds.) Link - hedge-parsley
Tribulus terrestris L. - puncturevine
Tussilago farfara L. - coltsfoot
Verbascum thapsus L. - common mullein
Vinca major L. - large periwinkle
Vinca minor L. - common periwinkle
Wisteria floribunda (Willd.) DC. - wisteria
Wisteria sinensis (Sims) Sweet - Chinese wisteria

RANK 3. "LESSER THREAT"

Exotic plant species which seem to principally spread and remain in disturbed corridors, not readily invading natural areas; also some agronomic weeds.

Bromus catharticus Vahl - brome
Bromus commutatus Schrad. - brome
Bromus hordeaceus L. - brome
Bromus sterilis L. - brome
Broussonetia papyrifera (L.) Vent. - paper mulberry
Buglossoides arvensis (L.) I.M. Johnston - corn gromwell
Bupleurum rotundifolium L. - hound's-ear
Cardiospermum halicacabum L. - balloonvine
Centaurea cyanus L. - bachelor's button
Cichorium intybus L. - chicory
Conium maculatum L. - poison hemlock
Cosmos bipinnatus Cav. - cosmos
Cosmos sulphureus Cav. - cosmos
Daucus carota L. - wild carrot, Queen Anne's-lace
Eschscholtzia californica Cham. - California poppy

Horizon Center

Plant Lists – EXHIBIT D

Rev 1 – July 1, 2013

Euphorbia humistrata Engelm. ex A. Gray - spreading spurge
Fatoua villosa (Thunb.) Nakai - hairy crabweed
Hibiscus syriacus L. - rose of Sharon
Kummerowia stipulacea (Maxim.) Schindl. - Korean clover
Kummerowia striata (Thunb.) Schindl. - Japanese clover
Macleaya cordata (Willd.) R. Br. - plume-poppy, tree celandine
Melia azedarach L. - Chinaberry
Mentha spicata L. - spearmint
Mentha x piperita L. - peppermint
Muscari atlanticum Boiss. & Reut. - grape hyacinth
Muscari botryoides (L.) Mill. - grape hyacinth
 *Muscari comosus (L.) Mill.
Ornithogalum umbellatum L. - star of Bethlehem
Papaver dubium L. - poppy
Pastinaca sativa L. - parsnip
Phalaris canariensis L. - canary grass
Polygonum orientale L. - Prince's feather
Polygonum persicaria L. - lady's thumb
Populus alba L. - white poplar
Rubus phoenicolasius Maxim. - wineberry
Senecio vulgaris L. - ragwort
Senna obtusifolia (L.) H.S. Irwin & Barneby - sicklepod senna
Senna occidentalis (L.) Link - coffee senna
Setaria faberi R.A.W. Herrm. - nodding foxtail-grass
Setaria italica (L.) P. Beauv. - foxtail-millet
Solanum dulcamara L. - bittersweet
Stachys floridana Shuttlew. - hedge nettle
Tragopogon dubius Scop. - yellow goats-beard
Ulmus pumila L. - dwarf elm
Urtica dioica L. - stinging nettle
Xanthium spinosum L. - spiny cocklebur
Xanthium strumarium L. - common cocklebur

WATCH LIST

May be a problem elsewhere; more information needed

Alnus glutinosa (L.) Gaertn. - sticky alder

Echium vulgare L. - viper's bugloss

Hypericum perforatum L. - goatweed, St. John's-wort

Najas minor All. - water nymph

Rhamnus frangula L. - alder buckthorn

* LISTED BY REASON OF SIMILARITY OF APPEARANCE

** A NATIVE SPECIES, HOWEVER, INTRODUCED "RACES" ARE INVASIVE

Maintained by Stephen Killeffer

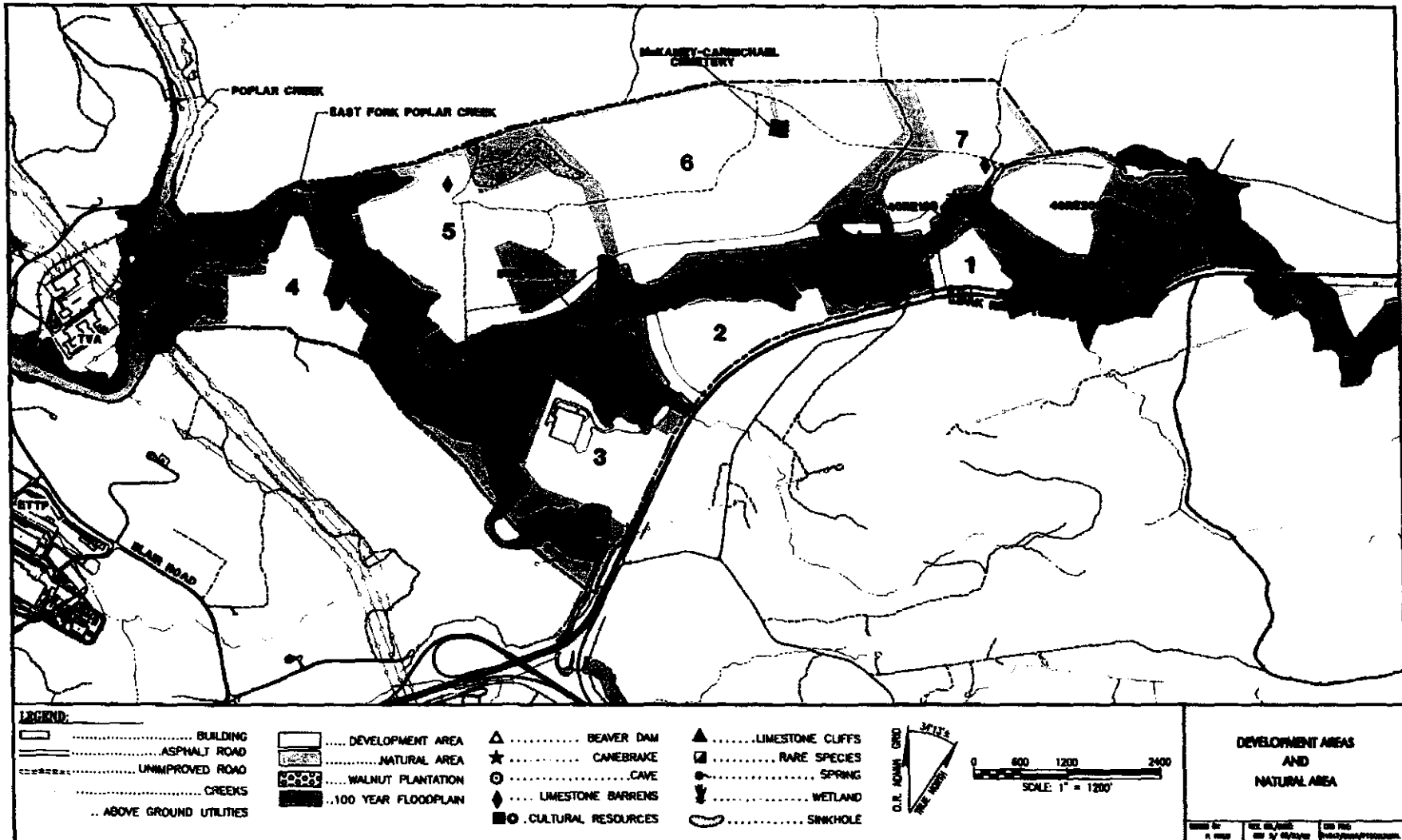
Last modified: January, 1997

Send comments about this site to sek@dcr.state.va.us

Rev 1 – July 1, 2013

Horizon Center

Exhibit E



Book 1487 Page 854



United States Department of the Interior



FISH AND WILDLIFE SERVICE
Tennessee Ecological Services Field Office
446 Neal Street
Cookeville, TN 38501-4027
Phone: (931) 528-6481 Fax: (931) 528-7075

In Reply Refer To:

March 14, 2022

Project Code: 2022-0019326

Project Name: TRISO-X NRC Licensing Application Project—TRISO Horizon Center Site Fuels Fabrication Facility

Subject: List of threatened and endangered species that may occur in your proposed project location or may be affected by your proposed project

To Whom It May Concern:

The enclosed species list identifies threatened, endangered, proposed and candidate species, as well as proposed and final designated critical habitat, that may occur within the boundary of your proposed project and/or may be affected by your proposed project. The species list fulfills the requirements of the U.S. Fish and Wildlife Service (Service) under section 7(c) of the Endangered Species Act (Act) of 1973, as amended (16 U.S.C. 1531 *et seq.*).

New information based on updated surveys, changes in the abundance and distribution of species, changed habitat conditions, or other factors could change this list. Please feel free to contact us if you need more current information or assistance regarding the potential impacts to federally proposed, listed, and candidate species and federally designated and proposed critical habitat. Please note that under 50 CFR 402.12(e) of the regulations implementing section 7 of the Act, the accuracy of this species list should be verified after 90 days. This verification can be completed formally or informally as desired. The Service recommends that verification be completed by visiting the ECOS-IPaC website at regular intervals during project planning and implementation for updates to species lists and information. An updated list may be requested through the ECOS-IPaC system by completing the same process used to receive the enclosed list.

The purpose of the Act is to provide a means whereby threatened and endangered species and the ecosystems upon which they depend may be conserved. Under sections 7(a)(1) and 7(a)(2) of the Act and its implementing regulations (50 CFR 402 *et seq.*), Federal agencies are required to utilize their authorities to carry out programs for the conservation of threatened and endangered species and to determine whether projects may affect threatened and endangered species and/or designated critical habitat.

A Biological Assessment is required for construction projects (or other undertakings having similar physical impacts) that are major Federal actions significantly affecting the quality of the human environment as defined in the National Environmental Policy Act (42 U.S.C. 4332(2)

(c)). For projects other than major construction activities, the Service suggests that a biological evaluation similar to a Biological Assessment be prepared to determine whether the project may affect listed or proposed species and/or designated or proposed critical habitat. Recommended contents of a Biological Assessment are described at 50 CFR 402.12.

If a Federal agency determines, based on the Biological Assessment or biological evaluation, that listed species and/or designated critical habitat may be affected by the proposed project, the agency is required to consult with the Service pursuant to 50 CFR 402. In addition, the Service recommends that candidate species, proposed species and proposed critical habitat be addressed within the consultation. More information on the regulations and procedures for section 7 consultation, including the role of permit or license applicants, can be found in the "Endangered Species Consultation Handbook" at:

<http://www.fws.gov/endangered/esa-library/pdf/TOC-GLOS.PDF>

Migratory Birds: In addition to responsibilities to protect threatened and endangered species under the Endangered Species Act (ESA), there are additional responsibilities under the Migratory Bird Treaty Act (MBTA) and the Bald and Golden Eagle Protection Act (BGEPA) to protect native birds from project-related impacts. Any activity, intentional or unintentional, resulting in take of migratory birds, including eagles, is prohibited unless otherwise permitted by the U.S. Fish and Wildlife Service (50 C.F.R. Sec. 10.12 and 16 U.S.C. Sec. 668(a)). For more information regarding these Acts see <https://www.fws.gov/birds/policies-and-regulations.php>.

The MBTA has no provision for allowing take of migratory birds that may be unintentionally killed or injured by otherwise lawful activities. It is the responsibility of the project proponent to comply with these Acts by identifying potential impacts to migratory birds and eagles within applicable NEPA documents (when there is a federal nexus) or a Bird/Eagle Conservation Plan (when there is no federal nexus). Proponents should implement conservation measures to avoid or minimize the production of project-related stressors or minimize the exposure of birds and their resources to the project-related stressors. For more information on avian stressors and recommended conservation measures see <https://www.fws.gov/birds/bird-enthusiasts/threats-to-birds.php>.

In addition to MBTA and BGEPA, Executive Order 13186: *Responsibilities of Federal Agencies to Protect Migratory Birds*, obligates all Federal agencies that engage in or authorize activities that might affect migratory birds, to minimize those effects and encourage conservation measures that will improve bird populations. Executive Order 13186 provides for the protection of both migratory birds and migratory bird habitat. For information regarding the implementation of Executive Order 13186, please visit <https://www.fws.gov/birds/policies-and-regulations/executive-orders/e0-13186.php>.

We appreciate your concern for threatened and endangered species. The Service encourages Federal agencies to include conservation of threatened and endangered species into their project planning to further the purposes of the Act. Please include the Consultation Code in the header of this letter with any request for consultation or correspondence about your project that you submit to our office.

Attachment(s):

- Official Species List
 - USFWS National Wildlife Refuges and Fish Hatcheries
 - Migratory Birds
 - Wetlands
-

Official Species List

This list is provided pursuant to Section 7 of the Endangered Species Act, and fulfills the requirement for Federal agencies to "request of the Secretary of the Interior information whether any species which is listed or proposed to be listed may be present in the area of a proposed action".

This species list is provided by:

Tennessee Ecological Services Field Office

446 Neal Street

Cookeville, TN 38501-4027

(931) 528-6481

Project Summary

Project Code: 2022-0019326
Event Code: None
Project Name: TRISO-X NRC Licensing Application Project—TRISO Horizon Center Site Fuels Fabrication Facility
Project Type: New Constr - Above Ground
Project Description: Wood Environment & Infrastructure Solutions, Inc. (Wood) has been retained by TRISO-X, LLC (TRISO-X) to assist in the evaluation of construction and operation impacts for a proposed Fuel Fabrication Facility (FFF). TRISO-X is an advanced nuclear reactor design and fuel fabrication company that intends to fabricate advanced nuclear fuels from high assay low enriched uranium (HALEU), based on TRISO-X's uranium oxycarbide tristructural isotropic (TRISO) fuel forms, for use in both advanced reactors and the existing fleet of light-water reactors. TRISO-coated fuels are unique in their multilayer encapsulation of uranium, providing increased safety, proliferation resistance, and functional containment. TRISO-X has demonstrated TRISO-based fuel fabrication capability at the commercial scale TRISO-X Pilot Facility at the Oak Ridge National Laboratory (ORNL).
A license under 10 CFR Part 70 from the Office of Nuclear Material Safety and Safeguards (NMSS) of the United States Nuclear Regulatory Commission (NRC) will be required for construction and operation of the proposed commercial TRISO-X FFF. TRISO-X is in the process of preparing an Environmental Report (ER) in compliance with NUREG 1748 (Environmental Review Guidance for Licensing Actions Associated with NMSS Programs, issued by NRC) to be used by the NRC to prepare an Environmental Impact Statement (EIS) for compliance with the National Environmental Policy Act (NEPA).
The potential site for construction and operation of the facility is an undeveloped, approximately 110-acre site identified as the Horizon Center Site (HCS) located near 201 Renovare Boulevard in Oak Ridge, Roane County, Tennessee, approximately 25 miles from Knoxville. The HCS property is currently owned by the City of Oak Ridge Industrial Development Board. HCS has the available space for construction of infrastructure required for all activities from receiving the

raw material to the production of the final fuel product, including fuel fabrication, material storage, administrative offices, and other supporting facilities. The site has access to needed utilities, such as gas, supply of water, electricity, and other utilities. The facility would obtain water, for both potable and industrial use, from the City of Oak Ridge public distribution system. Similarly, the City of Oak Ridge would provide wastewater treatment services to the proposed facility. The FFF would be constructed mostly on previously disturbed land with herbaceous vegetation cover that is mowed periodically. There are some scattered trees on the site that are potentially suitable for bat summer roost habitat, and these trees would need to be removed before construction.

Project Location:

Approximate location of the project can be viewed in Google Maps: <https://www.google.com/maps/@35.9611794,-84.36987870118395,14z>



Counties: Roane County, Tennessee

Endangered Species Act Species

There is a total of 9 threatened, endangered, or candidate species on this species list.

Species on this list should be considered in an effects analysis for your project and could include species that exist in another geographic area. For example, certain fish may appear on the species list because a project could affect downstream species.

IPaC does not display listed species or critical habitats under the sole jurisdiction of NOAA Fisheries¹, as USFWS does not have the authority to speak on behalf of NOAA and the Department of Commerce.

See the "Critical habitats" section below for those critical habitats that lie wholly or partially within your project area under this office's jurisdiction. Please contact the designated FWS office if you have questions.

-
1. [NOAA Fisheries](#), also known as the National Marine Fisheries Service (NMFS), is an office of the National Oceanic and Atmospheric Administration within the Department of Commerce.

Mammals

NAME	STATUS
Gray Bat <i>Myotis grisescens</i> No critical habitat has been designated for this species. Species profile: https://ecos.fws.gov/ecp/species/6329	Endangered
Indiana Bat <i>Myotis sodalis</i> There is final critical habitat for this species. The location of the critical habitat is not available. Species profile: https://ecos.fws.gov/ecp/species/5949	Endangered
Northern Long-eared Bat <i>Myotis septentrionalis</i> No critical habitat has been designated for this species. Species profile: https://ecos.fws.gov/ecp/species/9045	Threatened

Fishes

NAME	STATUS
Spotfin Chub <i>Erimonax monachus</i> Population: Wherever found, except where listed as an experimental population There is final critical habitat for this species. The location of the critical habitat is not available. Species profile: https://ecos.fws.gov/ecp/species/1521	Threatened

Clams

NAME	STATUS
Finerayed Pigtoe <i>Fusconaia cuneolus</i> Population: Wherever found; Except where listed as Experimental Populations No critical habitat has been designated for this species. Species profile: https://ecos.fws.gov/ecp/species/3038	Endangered
Shiny Pigtoe <i>Fusconaia cor</i> Population: Wherever found; Except where listed as Experimental Populations No critical habitat has been designated for this species. Species profile: https://ecos.fws.gov/ecp/species/2573	Endangered

Insects

NAME	STATUS
Monarch Butterfly <i>Danaus plexippus</i> No critical habitat has been designated for this species. Species profile: https://ecos.fws.gov/ecp/species/9743	Candidate

Flowering Plants

NAME	STATUS
Virginia Spiraea <i>Spiraea virginiana</i> No critical habitat has been designated for this species. Species profile: https://ecos.fws.gov/ecp/species/1728	Threatened
White Fringeless Orchid <i>Platanthera integrilabia</i> Population: No critical habitat has been designated for this species. Species profile: https://ecos.fws.gov/ecp/species/1889	Threatened

Critical habitats

THERE ARE NO CRITICAL HABITATS WITHIN YOUR PROJECT AREA UNDER THIS OFFICE'S JURISDICTION.

USFWS National Wildlife Refuge Lands And Fish Hatcheries

Any activity proposed on lands managed by the [National Wildlife Refuge](#) system must undergo a 'Compatibility Determination' conducted by the Refuge. Please contact the individual Refuges to discuss any questions or concerns.

THERE ARE NO REFUGE LANDS OR FISH HATCHERIES WITHIN YOUR PROJECT AREA.

Migratory Birds

Certain birds are protected under the Migratory Bird Treaty Act¹ and the Bald and Golden Eagle Protection Act².

Any person or organization who plans or conducts activities that may result in impacts to migratory birds, eagles, and their habitats should follow appropriate regulations and consider implementing appropriate conservation measures, as described [below](#).

-
1. The [Migratory Birds Treaty Act](#) of 1918.
 2. The [Bald and Golden Eagle Protection Act](#) of 1940.
 3. 50 C.F.R. Sec. 10.12 and 16 U.S.C. Sec. 668(a)

The birds listed below are birds of particular concern either because they occur on the [USFWS Birds of Conservation Concern](#) (BCC) list or warrant special attention in your project location. To learn more about the levels of concern for birds on your list and how this list is generated, see the FAQ [below](#). This is not a list of every bird you may find in this location, nor a guarantee that every bird on this list will be found in your project area. To see exact locations of where birders and the general public have sighted birds in and around your project area, visit the [E-bird data mapping tool](#) (Tip: enter your location, desired date range and a species on your list). For projects that occur off the Atlantic Coast, additional maps and models detailing the relative occurrence and abundance of bird species on your list are available. Links to additional information about Atlantic Coast birds, and other important information about your migratory bird list, including how to properly interpret and use your migratory bird report, can be found [below](#).

For guidance on when to schedule activities or implement avoidance and minimization measures to reduce impacts to migratory birds on your list, click on the PROBABILITY OF PRESENCE SUMMARY at the top of your list to see when these birds are most likely to be present and breeding in your project area.

NAME	BREEDING SEASON
Cerulean Warbler <i>Dendroica cerulea</i> This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska. https://ecos.fws.gov/ecp/species/2974	Breeds Apr 27 to Jul 20
Kentucky Warbler <i>Oporornis formosus</i> This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska.	Breeds Apr 20 to Aug 20
Prairie Warbler <i>Dendroica discolor</i> This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska.	Breeds May 1 to Jul 31

NAME	BREEDING SEASON
Prothonotary Warbler <i>Protonotaria citrea</i> This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska.	Breeds Apr 1 to Jul 31
Red-headed Woodpecker <i>Melanerpes erythrocephalus</i> This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska.	Breeds May 10 to Sep 10
Wood Thrush <i>Hylocichla mustelina</i> This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska.	Breeds May 10 to Aug 31

Probability Of Presence Summary

The graphs below provide our best understanding of when birds of concern are most likely to be present in your project area. This information can be used to tailor and schedule your project activities to avoid or minimize impacts to birds. Please make sure you read and understand the FAQ "Proper Interpretation and Use of Your Migratory Bird Report" before using or attempting to interpret this report.

Probability of Presence (■)

Each green bar represents the bird's relative probability of presence in the 10km grid cell(s) your project overlaps during a particular week of the year. (A year is represented as 12 4-week months.) A taller bar indicates a higher probability of species presence. The survey effort (see below) can be used to establish a level of confidence in the presence score. One can have higher confidence in the presence score if the corresponding survey effort is also high.

How is the probability of presence score calculated? The calculation is done in three steps:

1. The probability of presence for each week is calculated as the number of survey events in the week where the species was detected divided by the total number of survey events for that week. For example, if in week 12 there were 20 survey events and the Spotted Towhee was found in 5 of them, the probability of presence of the Spotted Towhee in week 12 is 0.25.
2. To properly present the pattern of presence across the year, the relative probability of presence is calculated. This is the probability of presence divided by the maximum probability of presence across all weeks. For example, imagine the probability of presence in week 20 for the Spotted Towhee is 0.05, and that the probability of presence at week 12 (0.25) is the maximum of any week of the year. The relative probability of presence on week 12 is $0.25/0.25 = 1$; at week 20 it is $0.05/0.25 = 0.2$.
3. The relative probability of presence calculated in the previous step undergoes a statistical conversion so that all possible values fall between 0 and 10, inclusive. This is the probability of presence score.

Breeding Season (■)

Yellow bars denote a very liberal estimate of the time-frame inside which the bird breeds across its entire range. If there are no yellow bars shown for a bird, it does not breed in your project area.

Survey Effort (|)

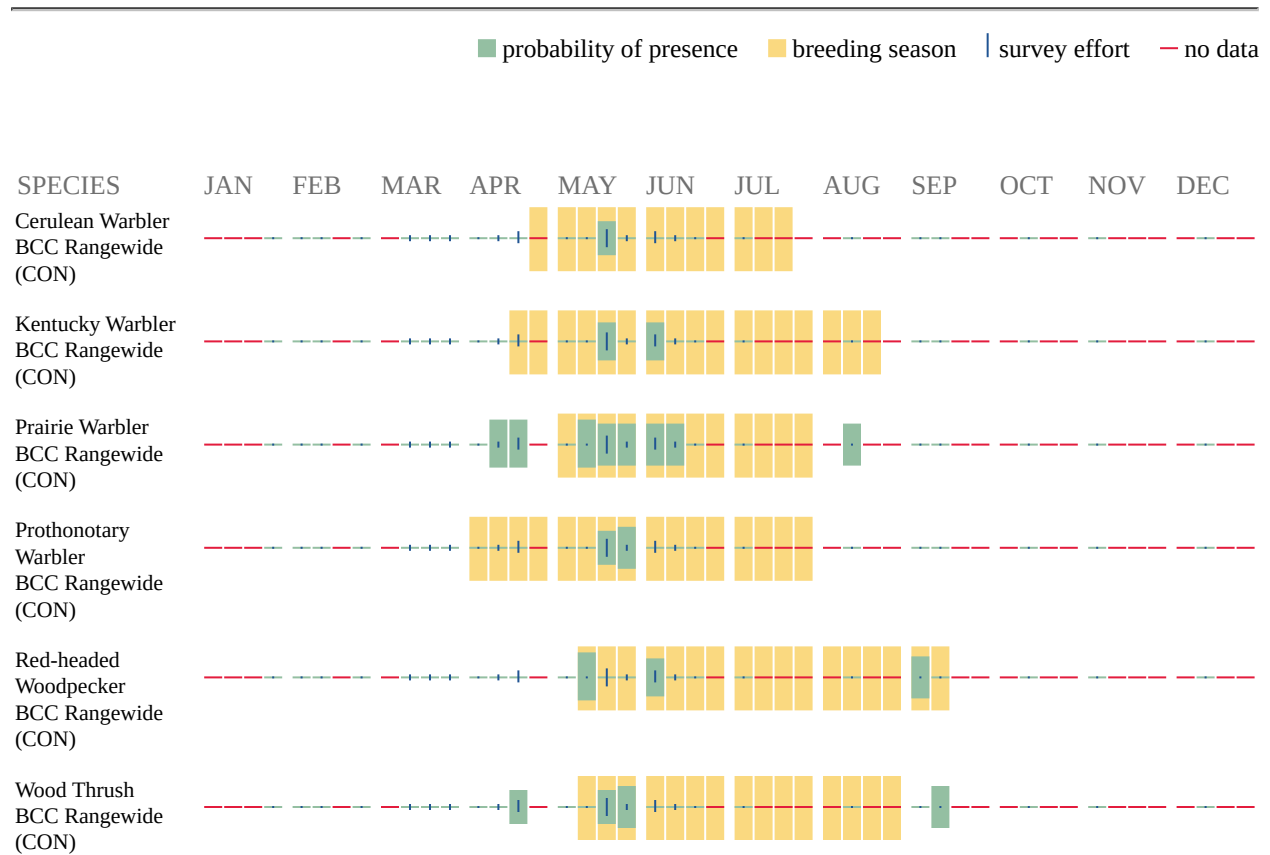
Vertical black lines superimposed on probability of presence bars indicate the number of surveys performed for that species in the 10km grid cell(s) your project area overlaps. The number of surveys is expressed as a range, for example, 33 to 64 surveys.

No Data (-)

A week is marked as having no data if there were no survey events for that week.

Survey Timeframe

Surveys from only the last 10 years are used in order to ensure delivery of currently relevant information. The exception to this is areas off the Atlantic coast, where bird returns are based on all years of available data, since data in these areas is currently much more sparse.



Additional information can be found using the following links:

- Birds of Conservation Concern <http://www.fws.gov/birds/management/managed-species/birds-of-conservation-concern.php>

- Measures for avoiding and minimizing impacts to birds <http://www.fws.gov/birds/management/project-assessment-tools-and-guidance/conservation-measures.php>
- Nationwide conservation measures for birds <http://www.fws.gov/migratorybirds/pdf/management/nationwidestandardconservationmeasures.pdf>

Migratory Birds FAQ

Tell me more about conservation measures I can implement to avoid or minimize impacts to migratory birds.

[Nationwide Conservation Measures](#) describes measures that can help avoid and minimize impacts to all birds at any location year round. Implementation of these measures is particularly important when birds are most likely to occur in the project area. When birds may be breeding in the area, identifying the locations of any active nests and avoiding their destruction is a very helpful impact minimization measure. To see when birds are most likely to occur and be breeding in your project area, view the Probability of Presence Summary. [Additional measures](#) or [permits](#) may be advisable depending on the type of activity you are conducting and the type of infrastructure or bird species present on your project site.

What does IPaC use to generate the migratory birds potentially occurring in my specified location?

The Migratory Bird Resource List is comprised of USFWS [Birds of Conservation Concern \(BCC\)](#) and other species that may warrant special attention in your project location.

The migratory bird list generated for your project is derived from data provided by the [Avian Knowledge Network \(AKN\)](#). The AKN data is based on a growing collection of [survey, banding, and citizen science datasets](#) and is queried and filtered to return a list of those birds reported as occurring in the 10km grid cell(s) which your project intersects, and that have been identified as warranting special attention because they are a BCC species in that area, an eagle ([Eagle Act](#) requirements may apply), or a species that has a particular vulnerability to offshore activities or development.

Again, the Migratory Bird Resource list includes only a subset of birds that may occur in your project area. It is not representative of all birds that may occur in your project area. To get a list of all birds potentially present in your project area, please visit the [AKN Phenology Tool](#).

What does IPaC use to generate the probability of presence graphs for the migratory birds potentially occurring in my specified location?

The probability of presence graphs associated with your migratory bird list are based on data provided by the [Avian Knowledge Network \(AKN\)](#). This data is derived from a growing collection of [survey, banding, and citizen science datasets](#).

Probability of presence data is continuously being updated as new and better information becomes available. To learn more about how the probability of presence graphs are produced and how to interpret them, go the Probability of Presence Summary and then click on the "Tell me about these graphs" link.

How do I know if a bird is breeding, wintering, migrating or present year-round in my project area?

To see what part of a particular bird's range your project area falls within (i.e. breeding, wintering, migrating or year-round), you may refer to the following resources: [The Cornell Lab of Ornithology All About Birds Bird Guide](#), or (if you are unsuccessful in locating the bird of interest there), the [Cornell Lab of Ornithology Neotropical Birds guide](#). If a bird on your migratory bird species list has a breeding season associated with it, if that bird does occur in your project area, there may be nests present at some point within the timeframe specified. If "Breeds elsewhere" is indicated, then the bird likely does not breed in your project area.

What are the levels of concern for migratory birds?

Migratory birds delivered through IPaC fall into the following distinct categories of concern:

1. "BCC Rangewide" birds are [Birds of Conservation Concern](#) (BCC) that are of concern throughout their range anywhere within the USA (including Hawaii, the Pacific Islands, Puerto Rico, and the Virgin Islands);
2. "BCC - BCR" birds are BCCs that are of concern only in particular Bird Conservation Regions (BCRs) in the continental USA; and
3. "Non-BCC - Vulnerable" birds are not BCC species in your project area, but appear on your list either because of the [Eagle Act](#) requirements (for eagles) or (for non-eagles) potential susceptibilities in offshore areas from certain types of development or activities (e.g. offshore energy development or longline fishing).

Although it is important to try to avoid and minimize impacts to all birds, efforts should be made, in particular, to avoid and minimize impacts to the birds on this list, especially eagles and BCC species of rangewide concern. For more information on conservation measures you can implement to help avoid and minimize migratory bird impacts and requirements for eagles, please see the FAQs for these topics.

Details about birds that are potentially affected by offshore projects

For additional details about the relative occurrence and abundance of both individual bird species and groups of bird species within your project area off the Atlantic Coast, please visit the [Northeast Ocean Data Portal](#). The Portal also offers data and information about other taxa besides birds that may be helpful to you in your project review. Alternately, you may download the bird model results files underlying the portal maps through the [NOAA NCCOS Integrative Statistical Modeling and Predictive Mapping of Marine Bird Distributions and Abundance on the Atlantic Outer Continental Shelf](#) project webpage.

Bird tracking data can also provide additional details about occurrence and habitat use throughout the year, including migration. Models relying on survey data may not include this information. For additional information on marine bird tracking data, see the [Diving Bird Study](#) and the [nanotag studies](#) or contact [Caleb Spiegel](#) or [Pam Loring](#).

What if I have eagles on my list?

If your project has the potential to disturb or kill eagles, you may need to [obtain a permit](#) to avoid violating the Eagle Act should such impacts occur.

Proper Interpretation and Use of Your Migratory Bird Report

The migratory bird list generated is not a list of all birds in your project area, only a subset of birds of priority concern. To learn more about how your list is generated, and see options for identifying what other birds may be in your project area, please see the FAQ "What does IPaC use to generate the migratory birds potentially occurring in my specified location". Please be aware this report provides the "probability of presence" of birds within the 10 km grid cell(s) that overlap your project; not your exact project footprint. On the graphs provided, please also look carefully at the survey effort (indicated by the black vertical bar) and for the existence of the "no data" indicator (a red horizontal bar). A high survey effort is the key component. If the survey effort is high, then the probability of presence score can be viewed as more dependable. In contrast, a low survey effort bar or no data bar means a lack of data and, therefore, a lack of certainty about presence of the species. This list is not perfect; it is simply a starting point for identifying what birds of concern have the potential to be in your project area, when they might be there, and if they might be breeding (which means nests might be present). The list helps you know what to look for to confirm presence, and helps guide you in knowing when to implement conservation measures to avoid or minimize potential impacts from your project activities, should presence be confirmed. To learn more about conservation measures, visit the FAQ "Tell me about conservation measures I can implement to avoid or minimize impacts to migratory birds" at the bottom of your migratory bird trust resources page.

Wetlands

Impacts to [NWI wetlands](#) and other aquatic habitats may be subject to regulation under Section 404 of the Clean Water Act, or other State/Federal statutes.

For more information please contact the Regulatory Program of the local [U.S. Army Corps of Engineers District](#).

Please note that the NWI data being shown may be out of date. We are currently working to update our NWI data set. We recommend you verify these results with a site visit to determine the actual extent of wetlands on site.

FRESHWATER FORESTED/SHRUB WETLAND

- [PFO1A](#)

RIVERINE

- [R4SBC](#)
-

IPaC User Contact Information

Agency: Wood
Name: Rebecca Porath
Address: Wood
Address Line 2: 15933 Clayton Road
City: Columbia
State: MO
Zip: 65201
Email: rebecca.porath@woodplc.com
Phone: 5732569891

Enclosure 2 - Reference Material for Response to RAI ER-TES-3

Quad Name	Quad ID	Type	Category	Scientific Name	Common Name	Global Rank	State Rank	Fed. Status	State Status	Habitat	Wet Habitat Flag
BETHEL-VALLEY	3508483	Vertebrate Animal	Amphibian	<i>Cryptobranchus alleganiensis</i>	Hellbender	G3	S3	No Status	E	Rocky, clear creeks and rivers with large shelter rocks.	Aquatic
BETHEL-VALLEY	3508483	Vertebrate Animal	Amphibian	<i>Hemidactylium scutatum</i>	Four-toed Salamander	G5	S3	--	D	Woodland swamps, shallow depressions, & sphagnum mats on acidic soils; middle & east Tennessee.	Possible
BETHEL-VALLEY	3508483	Vertebrate Animal	Amphibian	<i>Aneides aeneus</i>	Green Salamander	G3G4	S3S4	--	Rare, Not State Listed	Damp crevices in shaded rock outcrops and ledges; beneath loose bark and cracks of trees and sometimes in/or under logs.	Upland
BETHEL-VALLEY	3508483	Vertebrate Animal	Bird	<i>Peucaea aestivalis</i>	Bachman's Sparrow	G3	S1B	--	E	Dry open pine or oak woods; nests on the ground in dense cover.	Upland
BETHEL-VALLEY	3508483	Vertebrate Animal	Bird	<i>Setophaga cerulea</i>	Cerulean Warbler	G4	S3B	--	D	Mature deciduous forest, particularly in floodplains or mesic conditions.	Upland
BETHEL-VALLEY	3508483	Vertebrate Animal	Bird	<i>Limnothlypis swainsonii</i>	Swainson's Warbler	G4	S3	--	D	Mature, rich, damp, deciduous floodplain and swamp forests.	Possible
BETHEL-VALLEY	3508483	Vertebrate Animal	Fish	<i>Chrosomus tennesseensis</i>	Tennessee Dace	G3	S3	--	D	First order spring-fed streams of woodlands in Ridge and Valley limestone region; Tennessee River watershed.	Aquatic
BETHEL-VALLEY	3508483	Vertebrate Animal	Fish	<i>Hemitremia flammea</i>	Flame Chub	G3	S3	--	D	Springs and spring-fed streams with lush aquatic vegetation; Tennessee & middle Cumberland river watersheds.	Aquatic
BETHEL-VALLEY	3508483	Vascular Plant	Flowering Plant	<i>Diervilla lonicera</i>	Northern Bush-honey	G5	S2	--	T	Rocky Woodlands And Bluffs	Upland
BETHEL-VALLEY	3508483	Vascular Plant	Flowering Plant	<i>Aureolaria patula</i>	Spreading False-foxtail	G3	S3	--	S	Oak Woods And Edges	Upland
BETHEL-VALLEY	3508483	Vascular Plant	Flowering Plant	<i>Eurybia schreberi</i>	Schreber's Aster	G4	S1	--	S	Mesic Woods & Seepage Slopes	Upland
BETHEL-VALLEY	3508483	Vascular Plant	Flowering Plant	<i>Lonicera dioica</i>	Mountain Honeysuckle	G5	S2	--	S	Mountain Woods And Thickets	Possible
BETHEL-VALLEY	3508483	Vascular Plant	Flowering Plant	<i>Delphinium exaltatum</i>	Tall Larkspur	G3	S2	--	E	Glades And Barrens	Upland
BETHEL-VALLEY	3508483	Vascular Plant	Flowering Plant	<i>Liparis loeselii</i>	Fen Orchis	G5	S1	--	T	Calcareous Seeps	Possible
BETHEL-VALLEY	3508483	Vascular Plant	Flowering Plant	<i>Panax quinquefolius</i>	American Ginseng	G3G4	S3S4	--	S-CE	Rich Woods	Possible
BETHEL-VALLEY	3508483	Vascular Plant	Flowering Plant	<i>Juglans cinerea</i>	Butternut	G3	S3	--	T	Rich Woods And Hollows	Possible
BETHEL-VALLEY	3508483	Vascular Plant	Flowering Plant	<i>Juncus brachycephalus</i>	Small-headed Rush	G5	S2	--	S	Seeps And Wet Bluffs	Possible
BETHEL-VALLEY	3508483	Vascular Plant	Flowering Plant	<i>Elodea nuttallii</i>	Nuttall's Waterweed	G5	S2	--	S	Aquatic; Streams And Ponds	Aquatic
BETHEL-VALLEY	3508483	Vascular Plant	Flowering Plant	<i>Bolboschoenus fluviatilis</i>	River Bulrush	G5	S1	--	S	Marshes	Possible
BETHEL-VALLEY	3508483	Vascular Plant	Flowering Plant	<i>Fothergilla major</i>	Mountain Witch-alder	G3	S2	--	T	Rocky Slopes And River Banks	Possible
BETHEL-VALLEY	3508483	Vascular Plant	Flowering Plant	<i>Platanthera flava</i> var. <i>herbiola</i>	Tuber-cled Rein-orchid	G4?T4Q	S2	--	T	Swamps And Floodplains	Possible
BETHEL-VALLEY	3508483	Vertebrate Animal	Mammal	<i>Synaptomys cooperi</i>	Southern Bog Lemmin	G5	S4	--	D	Marshy meadows, wet balds, & rich upland forests. Cave obligate year-round; frequents forested areas; migratory.	Possible
BETHEL-VALLEY	3508483	Vertebrate Animal	Mammal	<i>Myotis grisescens</i>	Gray Myotis	G4	S2	LE	E	Mountainous, forested areas with loose talus; east Tennessee.	Upland
BETHEL-VALLEY	3508483	Vertebrate Animal	Mammal	<i>Sorex dispar</i>	Long-tailed Shrew	G4	S2	--	D	Large rivers in gravel and sand bars; Tennessee & Cumberland river watersheds; many historic locations currently inundated.	Upland
BETHEL-VALLEY	3508483	Invertebrate Animal	Mollusc	<i>Obovaria retusa</i>	Ring Pink	G1	S1	LE,XN	E	Shallow waters of shoals that are rapid to moderate and well-oxygenated; Tennessee River & main tributaries; E Tennessee.	Aquatic
BETHEL-VALLEY	3508483	Invertebrate Animal	Mollusc	<i>Io fluviatilis</i>	Spiny Riversnail	G1G2	S2	--	Rare, Not State Listed	Large to medium-sized rivers, in riffles and coarse sand/gravel subst; TN & Cumb river systems incl KY Reservoir; W Uplands & Rim.	Aquatic
BETHEL-VALLEY	3508483	Invertebrate Animal	Mollusc	<i>Plethobasus cyphus</i>	Sheepnose	G3	S2S3	LE	E	Generally a large river species, preferring sand-gravel or rocky substrates with mod-strong currents; Tennessee & Cumberland river systems.	Aquatic
BETHEL-VALLEY	3508483	Invertebrate Animal	Mollusc	<i>Lampsilis abrupta</i>	Pink Mucket	G1G2	S2	LE	E	Small-medium sized rivers, in clear, shallow riffles with sand-gravel substrates; Tenn. & Cumb. river systems; upland form.	Aquatic
BETHEL-VALLEY	3508483	Invertebrate Animal	Mollusc	<i>Theliderma cylindrica strigillata</i>	Rough Rabbitsfoot	G3G4T2	S2	LE	E	Large rivers in sand-gravel-cobble substrates in riffles and shoals in deep flowing water; Cumberland & Tennessee river systems.	Aquatic
BETHEL-VALLEY	3508483	Invertebrate Animal	Mollusc	<i>Plethobasus cooperianus</i>	Orange-foot Pimplebac	G1	S1	LE, XN	E	Medium to large streams and rivers with coarse sand and gravel substrates; Cumberland and Tennessee river systems.	Aquatic
BETHEL-VALLEY	3508483	Invertebrate Animal	Mollusc	<i>Cyprogenia stegaria</i>	Fanshell	G1	S1	LE, XN	E	Well-drained sandy soils in pine/pine-oak woods; dry mountain ridges; E portions of west TN, E to lower elev of the Appalachians.	Aquatic
BETHEL-VALLEY	3508483	Vertebrate Animal	Reptile	<i>Pituophis melanoleucus melanoleucus</i>	Northern Pinesnake	G4T4	S3	--	T		Upland

Enclosure 2 - Reference Material for Response to RAI ER-TES-3

BETHEL-VALLEY	3508483	Vertebrate Animal	Reptile	<i>Ophisaurus attenuatus longicaudus</i>	Eastern Slender Glass	G5T5	S3	--	D	Dry upland areas including brushy, cut-over woodlands and grassy fields; nearly statewide but obscure; fossorial.	Upland
BETHEL-VALLEY	3508483	Animal Assemblage		Rookery	Heron Rookery	G5	SNR	--	Rare, Not State Listed		

Enclosure 2 - Reference Material for Response to RAI ER-TES-3

Quad Name	Quad ID	Type	Category	Scientific Name	Common Name	Global Rank	State Rank	Fed. Status	State Status	Habitat	Wet Habitat Flag
ELVERTON	3508484	Vertebrate Animal	Amphibian	<i>Cryptobranchus alleganiensis</i>	Hellbender	G3	S3	No Status	E	Rocky, clear creeks and rivers with large shelter rocks.	Aquatic
ELVERTON	3508484	Vertebrate Animal	Amphibian	<i>Aneides aeneus</i>	Green Salamander	G3G4	S3S4	--	Rare, Not State Listed	Damp crevices in shaded rock outcrops and ledges; beneath loose bark and cracks of trees and sometimes in/or under logs.	Upland
ELVERTON	3508484	Invertebrate Animal	Crustacean	<i>Cambarus deweesae</i>	Valley Flame Crayfish	G4	S1	--	E	Primary burrower; open areas with high water tables; northern Ridge & Valley.	Aquatic
ELVERTON	3508484	Vertebrate Animal	Fish	<i>Percina aurantiaca</i>	Tangerine Darter	G4	S3	--	D	Large-moderate size headwater tribs to Tennessee River, in clear, fairly deep, rocky pools, usually below riffles.	Aquatic
ELVERTON	3508484	Vascular Plant	Flowering Plant	<i>Pseudognaphalium helleri</i>	Heller's Catfoot	G4G5	S2	--	S	Dry Sandy Woods	Upland
ELVERTON	3508484	Vascular Plant	Flowering Plant	<i>Draba ramosissima</i>	Branching Whitlow-grass	G4	S2	--	S	Calcareous Bluffs	Upland
ELVERTON	3508484	Vascular Plant	Flowering Plant	<i>Agalinis auriculata</i>	Earleaved False-foxglove	G3	S2	--	E	Barrens	Upland
ELVERTON	3508484	Vascular Plant	Flowering Plant	<i>Delphinium exaltatum</i>	Tall Larkspur	G3	S2	--	E	Glades And Barrens	Upland
ELVERTON	3508484	Vascular Plant	Flowering Plant	<i>Diervilla lonicera</i>	Northern Bush-honeysuckle	G5	S2	--	T	Rocky Woodlands And Bluffs	Upland
ELVERTON	3508484	Vascular Plant	Flowering Plant	<i>Lonicera dioica</i>	Mountain Honeysuckle	G5	S2	--	S	Mountain Woods And Thickets	Possible
ELVERTON	3508484	Vascular Plant	Flowering Plant	<i>Aureolaria patula</i>	Spreading False-foxglove	G3	S3	--	S	Oak Woods And Edges	Upland
ELVERTON	3508484	Vascular Plant	Flowering Plant	<i>Helianthus occidentalis</i>	Naked-stem Sunflower	G5	S2	--	S	Limestone Glades And Barrens	Upland
ELVERTON	3508484	Vascular Plant	Flowering Plant	<i>Liatris cylindracea</i>	Slender Blazing-star	G5	S2	--	T	Barrens	Upland
ELVERTON	3508484	Vascular Plant	Flowering Plant	<i>Panax quinquefolius</i>	American Ginseng	G3G4	S3S4	--	S-CE	Rich Woods	Possible
ELVERTON	3508484	Vascular Plant	Flowering Plant	<i>Oligoneuron album</i>	Prairie Goldenrod	G5	S1S2	--	E	Barrens	Upland
ELVERTON	3508484	Vascular Plant	Flowering Plant	<i>Spiranthes lucida</i>	Shining Ladies'-tresses	G4	S1S2	--	T	Alluvial Woods And Moist Slopes	Possible
ELVERTON	3508484	Vertebrate Animal	Mammal	<i>Synaptomys cooperi</i>	Southern Bog Lemming	G5	S4	--	D	Marshy meadows, wet balds, & rich upland forests.	Possible
ELVERTON	3508484	Vertebrate Animal	Mammal	<i>Myotis grisescens</i>	Gray Myotis	G4	S2	LE	E	Cave obligate year-round; frequents forested areas; migratory.	Upland
ELVERTON	3508484	Invertebrate Animal	Mollusc	<i>Lampsilis virescens</i>	Alabama Lampmussel	G1	S1	LE	E	Found in sand and gravel substrates in shoal areas of small-medium size rivers; middle and upper TN R system; recently rediscovered in Emory River.	Aquatic
ELVERTON	3508484	Invertebrate Animal	Mollusc	<i>Pleurobema rubrum</i>	Pyramid Pigtoe	G2G3	S1S2	--	Rare, Not State Listed	Rivers with strong current and firm sand/gravel substrates; TN & Cumb river systems incl KY Reservoir; W Uplands & W Highland Rim.	Aquatic
ELVERTON	3508484	Invertebrate Animal	Mollusc	<i>Cumberlandia monodonta</i>	Spectaclecase	G3	S2S3	LE	E	Medium to large rivers; in substrates from mud and sand to gravel, cobble, and boulders; Cumberland and Tennessee river systems.	Aquatic
ELVERTON	3508484	Invertebrate Animal	Mollusc	<i>Fusconaia cor</i>	Shiny Pigtoe	G1	S1	LE, XN	E	Shoals and riffles of small-medium sized rivers with mod-fast current over sand-cobble substrates; upper Tennessee River watershed.	Aquatic
ELVERTON	3508484	Invertebrate Animal	Mollusc	<i>Fusconaia cuneolus</i>	Finerayed Pigtoe	G1	S1	LE, XN	E	Riffles of fords and shoals of mod gradient streams in firm cobble and gravel substrates; middle & upper Tennessee River watershed.	Aquatic
ELVERTON	3508484	Animal Assemblage	Rookery		Heron Rookery	G5	SNR	--	Rare, Not State Listed		