

Agri-Waste Technology, Inc. 501 N. Salem Street, Suite 203 Apex, North Carolina 27502 919-859-0669 www.agriwaste.com

#### Environmental Impact Assessment

#### Parcel #70029 12820 Jordan Lake Commons Drive

Chatham County, North Carolina September 24, 2014 (Revised)

> Prepared For: Kunal Enterprises, LLC c/o Mr. George Farrell 210 Joseph Pond Lane Cary, NC 27519

Prepared By: Agri-Waste Technology, Inc. 501 N. Salem Street, Suite 203 Apex, North Carolina 27502 Office: 919-859-0669 Direct: 919-367-6310 Cell: 919-623-3538 Email: kdavidson@agriwaste.com

#### **Executive Summary**

Parcel #70029 is a 15.34 acre lot located at 12820 Jordan Lake Commons Drive. The site, which is adjacent to Highway 64 and Bob Horton Road, is home to Farrell's Apex Self Storage, Courtesy Towing, D&H RV Center, and a US Cellular cell tower. Presently, approximately 5.67 acres of the 15.34 acre lot are developed.

The proposed expansion for this site will include:

- Canopy Boat and RV Storage Stalls
- One Climate Control Prefabricated Metal Self-Storage Building
- One Non-Climate Control Prefabricated Metal Self-Storage Building
- One-story Commercial Building (HVAC Company)
- Gravel Drives and Parking Areas
- RV Showroom and Repair Facility with Temporary Dump/Transfer Station
- Removal of existing one-story frame dwelling and existing sheds

In accordance with Section 11.3 of the Chatham County Zoning Ordinance, an Environmental Impact Assessment (EIA) is required during a physical expansion of an additional Conditional Use Permit. This assessment intends to outline the existing conditions and notify the Chatham County Planning Board of any potential impacts that could be associated with the expansion project. The necessary maps and figures, wildlife and vegetative species list, site plans, and photographs have been included to aid in the content of the EIA.

#### **Table of Contents**

1.0	Prop	osed Project Description and Need	1
2.0	Alter	native Analysis	2
3.0	Existing Environment and Project Impacts		2
	3.1	Geography	3
	3.2	Soils and Prime Farmland	3
	3.3	Land Use and Land Cover	3
	3.4	Wetlands	4
	3.5	Public Lands, Scenic, Recreational, and State Natural Areas	4
	3.6	Areas of Archaeological or Historical Value	4
	3.7	Air Quality	5
	3.8	Noise Levels	5
	3.9	Light Levels	5
	3.10	Water Resources	5
	3.11	Fish and Aquatic Habitats	6
	3.12	Wildlife and Natural Vegetation	6
	3.13	Hazardous Materials	7
4.0	Mitig	ation Measures	7
5.0	State	and Federal Permits Required	7
6.0	Refer	ences	8

#### Appendices

#### Appendix A – Maps & Figures

Figure 1.	Project Location Map
Figure 2.	Structure Location Map
Figure 3.	Topographic Map
Figure 4.	Flood Map
Figure 5.	Soils Map
Figure 6.	Land Use/Land Cover Map
Figure 7.	Zoning Map
Figure 8.	Public Lands, Scenic, Recreation, and State Natural Areas
	Мар
Figure 9.	Areas of Archaeological or Historical Value Map

- Figure 10. Chatham County Historical Association Email
- Figure 11. Surface Water and Watershed Map

**Appendix B – Species Lists** 

- **B1.** Species List
- B2. Chatham County Endangered Species of Concern, and Candidate Species
- **B3.** Invasive Species List

**Appendix C – Site Plans** 

**Appendix D - Photographs** 

#### 1.0 Proposed Project Description and Need

Parcel #70029 is located at 12820 Jordan Lake Commons Drive in eastern Chatham County, North Carolina. The site is currently home to Farrell's Apex Self Storage, Courtesy Towing, and D&H RV Center. A cell phone tower (US Cellular) is also located on the property. Highway 64 bounds the property to the south while Bob Horton Road (SR 1744) bounds the property to the west. The site is located within the Lower New Hope River Arm of Jordan Lake Watershed with Jordan Lake located west down Highway 64. In addition to Farrell's Apex Self Storage and D&H RV Center, some of the other surrounding businesses include:

- Extra Garage Self Storage Center, LLC.
- Builders Firstsource
- John Deere Landscapes
- Buy Sod, Inc.

The property's location along Highway 64 provides easy access to Jordan Lake, Pittsboro, and Apex.

Kunal Enterprises, LLC is proposing an approximate 6.28-acre expansion to the current storage facilities and RV center on the undeveloped portion of the lot. Once completed, the 15.34-acre property will be comprised of 11.91-acres of Impervious Area and a maximum of 12.39-acres of Disturbed Area. An additional tract comprised of 17.83-acres will be designated as undisturbed for the purpose of satisfying Chatham County's limits of Impervious Area. The expansion will be conducted in a single phase and will include increased boat and RV parking and storage (covered and un-covered), additional selfstorage buildings, and additional commercial buildings. The far north side of the lot will contain canopy parking stalls for boat and RV parking. Two additional single-story, prefabricated metal self-storage buildings will be built directly north of the present storage facilities. Two additional rows of canopy boat/RV storage stalls will also be constructed immediately north of the existing storage buildings. The abandoned onestory frame dwelling and storage sheds present on the site will be removed. This area extending west to Bob Horton Road will be developed with a small commercial building (HVAC company), open gravel parking, and stormwater treatment devices. Lastly, this phase will include the construction of the RV Repair/Showroom building just north of the existing modular RV office. A combination of paved and gravel drives and parking will also serve the new development. The square footage and height of all proposed buildings are listed below:

- 4,950 S.F. single-story RV Showroom/Repair Building
- 3,600 S.F. single-story Commercial Building (HVAC company)
- 6,660 S.F. single-story Non Climate-Controlled Self Storage Building
- 2,160 S.F. single-story Climate-Controlled Self Storage Building
- 3,840 S.F. single-story Covered Boat & RV Storage
- 5,760 S.F. single-story Covered Boat & RV Storage
- 7,200 S.F. single-story Covered Boat & RV Storage
- 2,160 S.F. single-story Covered Boat & RV Storage
- 3,600 S.F. single-story Covered Boat & RV Storage

- 3,600 S.F. single-story Covered Boat & RV Storage
- 4,800 S.F. single-story Covered Boat & RV Storage
- 8,640 S.F. single-story Covered Boat & RV Storage
- 8,640 S.F. single-story Covered Boat & RV Storage
- 3,240 S.F. single-story Covered Boat & RV Storage

Appropriate stormwater control devices will be implemented on the site in order to manage the quality and quantity of the stormwater leaving the site. Structural BMP's will be implemented to improve the stormwater quality on the site to comply with the nutrient loading restrictions set forth by Chatham County for the Jordan Lake watershed. These BMP's will also promote infiltration and retain the stormwater on-site so as not to increase peak flowrates leaving the property as also required by Chatham County. Stormwater runoff from the existing development will be routed to appropriate BMP's to achieve the same level of treatment required for the expansion. An effort will be made to site structural BMP's in individual drainage areas to better control runoff at its source and so that these drainage areas may be linked together in series to achieve a higher level of treatment.

In addition, the project will modify the current onsite wastewater facilities. The current septic drainfield utilized by D&H RV Center will be abandoned. The waste produced at this facility will flow to a location in the new gravel lot to the north of the RV center. It will then be pumped to the existing drain field located at the far northwestern corner of the lot and/or to a new drainfield located to the north of the planned single-storage prefabricated metal buildings. The project will also modify the two existing drainage control devices located on the property. It is our understanding that these devices were previously installed as sediment and erosion control devices during original development of the property. One drainage device is located behind the abandoned one-story frame dwelling. An outlet is located on the northwest corner of the device which drains into a pond located on the adjacent property. The second device is located to the west of the property near the cell tower.

The close proximity to Jordan Lake and location along Highway 64 has created a need for the client to expand the present business facilities. Local residents and people who utilize the recreational facilities at Jordan Lake store their boats, RV's, and other belongings at this facility. Currently, the applicant doesn't have enough storage facilities and outside storage space to allocate for the growing demand. The expansion will provide more single storage facility space along with additional covered and uncovered parking space for boats and RV's.

#### 2.0 <u>Alternative Analysis</u>

The first alternative to this project is the "Do Nothing Alternative." This alternative consists of leaving the site in its current condition without any new development. The second alternative to the project expansion would consist of splitting the single parcel into multiple lots. The lots would then be sold to the present businesses on the site. This alternative would allow for each of the separate business to have a controlled interest in the expansion of their lots.

The current proposed plan was selected, because the site is already owned and partially developed by the current applicant. Choosing this expansion plan allows the applicant to develop the rest of the property and to support demands of the growing businesses. This expansion plan allows for better continuity in screening, landscaping, and appearance. This expansion plan will also allow for a more efficient use of space by allowing the stormwater management devices to be linked together across the property.

#### 3.0 Existing Environment and Project Impacts

Currently, the site location has approximately 5.67 acres developed of the 15.34 acre tract. The undeveloped portion is primarily 9.67 acres of forested land. D&H RV Center sits on the western portion of the property at the entrance to Jordan Lake Commons Drive. To the east of D&H RV Center lies a storage lot and an office building for Farrell's Apex Self Storage and Courtesy Towing. At the end of Jordan Lake Commons Drive, there are two single-story, metal storage facilities with a storage lot located behind the buildings. A cell tower owned by United States Cellular Corporation lies on the western corner of the property behind the D&H RV Center.

Timber harvest, re-grading, and construction of the new facilities will comprise the shortterm impacts of the project. These activities have the potential for increased runoff and erosion during the construction phase. Appropriate stormwater and erosion control measures (i.e. silt fences, vegetative cover, stormwater best management practices, project phasing) will be utilized during construction in order to minimize the potential impacts from the short-term activities.

Environmental impacts from the project include an increase in the impervious area, increased wastewater flow from the additional project activities, and reduction in the current site vegetation. Impervious area concerns will be addressed with dedicated, undeveloped off-site land and appropriate stormwater control devices for the expansion areas. The increased wastewater flow will be handled with on-site wastewater systems sized and permitted to handle the anticipated flow. Semi-annual maintenance procedures for the wastewater systems will be provided to ensure appropriate operation of the wastewater systems. New landscape buffers will also be installed to minimize any potential impacts from the reduction in the current site vegetation.

#### 3.1 Geography

The site is located within the Central Piedmont physiographic region and North Carolina Triassic Basin. The primary rock type and secondary rock type found at the site are Conglomerate and Sandstone respectively. The property contains a slope of approximately 6%. The high point of the property is 326 feet above sea level located at the northeast corner of the property boundary. The low point of the property is 300 feet above sea level which is located to the west of the present drainage device.

According to Figure 4, the property does not lie within any 100-year floodplain in the Jordan Lake watershed.

#### 3.2 Soils and Prime Farmland

There are two dominant soil types at the site. They are Carbonton-Brickhaven complex (CrB) and Carbonton-Brickhaven complex (CrC). According to the USDA Web Soil Survey these soil types are not prime or unique farmland soils. Portions of the on-site soil are suitable for the proposed on-site wastewater system. These proposed drainfield areas are to remain protected during construction and once the project is complete.

Soil disturbance will occur during the construction phase of the project. Areas of the property will have to be re-graded in order to provide suitable slopes for construction and parking. Any soil that is re-graded during the project will remain onsite and will not need to be relocated. This will result in no offsite impacts from this activity. There is no anticipated contamination resulting from the project.

During construction, erosion control procedures will be utilized to control construction runoff. Silt fences will be placed down slope of any areas experiencing re-grading and temporary sediment basins will be utilized as needed. Once the grading has been completed, seed and straw (if not the final cover) will be placed over the bare soil until vegetation resumes on the newly graded sites. This will result in no offsite impacts from this activity.

#### 3.3 Land Use and Land Cover

The land cover for the expansion portion of the site is mostly described by the Multi-Resolution Land and Characteristics Consortium (MLRC) as Evergreen Forest (42) with a small section of Grassland Herbaceous (31). A field evaluation found these descriptions accurate. More specifically, the land cover is mostly Loblolly pine with a small section of mixed herbaceous vegetation. These two land covers along with Low and Medium Intensity Development comprise the surrounding properties. The Land Use and Land Cover Map (Figure 6, Appendix A) show a clear delineation of these areas.

Several businesses are located around this project site. Three are located across US Highway 64 and another business is located to the west across Bob Horton Road.

Chatham County has zoned the property as CU-B-1 for a conditional use permit. This zone is designated for retail trade and consumer services that are in association with the general public. The adjacent properties on the northern side of Highway 64 are zoned as a low density residential district (R1). These locations are mainly for low-density residential or residential-agricultural areas. To the south of Highway 64, the surrounding properties are zoned for both Industrial Light (IL) and Industrial Heavy (IH) districts. Light Industrial Districts are for wholesale activities, warehouses, and light manufacturing. Heavy Industrial Districts are for areas that involve heavy manufacturing operations (Chatham County 2014). See Figure 7, Appendix A for the zoning designations of this site and surrounding areas.

The expansion of the self-storage facility and RV center is in a commercial sector along Highway 64. Zoning and land-use changes will not need to be changed once the project is completed.

#### 3.4 Wetlands

There are no wetlands associated with this expansion project.

#### 3.5 Public Lands, Scenic, Recreational, and State Natural Areas

Crosswinds Campground, federal land owned by the US Army Corps of Engineers (B.Everett Jordan Dam and Lake), and a Significant Natural Heritage Area are located within a one mile radius of the project site. Figure 8, of Appendix A shows the campground located northwest of the project site while the Significant Natural Heritage Area is northeast of the project site.

#### 3.6 Areas of Archaeological or Historical Value

There are no archaeological or historical studies being conducted on the site location. The Historical Preservation Office of North Carolina provided information regarding historical significance on or around this project site. Two historical sites are located within a 1 mile radius of the expansion site. They are the Selton Welch Farm and the place where the J.B. Mills house once stood. Figure 9 of Appendix A shows these site locations. These historical locations will not be impacted by this expansion project.

The Chatham County Historical Association confirmed there are no items of historical significance on this site. Correspondence with the association can be found in Appendix A.

The proposed expansion area of the project contains four existing structures on the lot. The first structure is an abandoned one-story dwelling that is estimated to be 39 years old. Beyond the one-story dwelling is a metal storage shed for the house. Another abandoned storage shed is located to the east of a LPP septic drain field. The final structure is a cell tower located at the far west corner of the parcel. None of these structures are older than 50 years. Figure 2, located in Appendix A, show the specific structure locations in relation to the rest of the property.

All of these structures, with the exception of the cell tower, will be demolished during different phases of the project. Phase I will include the demolition of the storage shed located near the septic drain field. Phase II will include the demolition of the abandoned house and metal storage shed.

#### 3.7 Air Quality

Due to the small-scale of the project, there are no expected significant air quality impacts on the area surrounding the lot. Odor levels should not increase either once the expansion is complete. There is no open-burning to be scheduled before or after construction.

#### 3.8 Noise Levels

Noise levels on the site are moderate with most of the noise being contributed from Highway 64. During the expansion of the site, noise levels are expected to increase due to re-grading and construction of the storage facilities. Once construction is complete, the potential increased noise level will still be negligible to the noise from Highway 64. Commercial businesses on the property are expected to operate during normal business hours with 24-hour gated access provided to customers of the storage facility.

#### 3.9 Light Levels

The current light plan will expand to include LED 215 fixtures with a mounting height of 30 feet. The initial light density from these fixtures will be no greater than 0.5 footcandles at any property line. A minimum sustained light density of 0.2 foot-candles will be present in all parking and drive areas. The biggest increase in light density will occur on the newly developed portion of the lot. Overall, there should be minimal to no lighting impact to the surrounding properties.

#### 3.10 Water Resources

According to Chatham County's GIS website this site is located in the Cape Fear River basin. It is part of the Lower New Hope River Arm of Jordan Lake Watershed and is listed as WS-IV PA. Approximately 0.35 miles north of the project site is an area where the watershed is listed as Critical. This critical area is a source of drinking water. A search on the Division of Water Resources Hydrogeological Database shows that there are no ground water aquifers on or around this project site.

Currently there are two drainage devices located on the project site. It is our understanding that these devices were originally installed as sediment and erosion control devices during the original site development. One device is located behind the existing abandoned house and the second device is located near the cell tower. The device located by the house has an outlet located on the northwest corner which drains into a non USGS pond on the adjacent property. A map illustrating this information can be found on the Surface Water and Watershed map in Appendix A (Figure 11).

#### 3.11 Fish and Aquatic Habitats

The fish and aquatic habitat for this project site occur in the drainage devices currently found on-site. During a field evaluation a substantial Bull Frog population was discovered in the device near the house. Bull Frog pray such as fish, smaller frogs, and reptiles were not seen during the site visit. The aquatic habitat for the drainage device is highly limited due to eutrophication. No aquatic or fish habitat was observed in the second drainage device.

#### 3.12 Wildlife and Natural Vegetation

A field evaluation for this project site was completed using a standard sampling method and GPS. A series of 25 plots within 10 acres were evaluated for Natural Community Type, percent coverage of trees (upper canopy), shrubs/saplings (lower canopy), grasses, and invasive plant species. These areas were also evaluated for the presence of Endangered/Threatened Species, Federal Species of Concern and Candidate Species for Chatham County NC. A complete listing of these species and a listing of invasive plants in Southeastern NC of can be found in Appendix B. Lastly, the presence of any wildlife was recorded.

The primary Natural Community Type is Loblolly Pine Forest. Throughout the parcel Pinus taeda dominate approximately 60 percent of the upper canopy. The Pinus taeda are not fully grown and in some areas the trees have been selectively timbered in order to encourage stronger growth in remaining trees. This community has a 30 percent lower canopy growth of Liquidambar styraciflura and no grasses. A Carolina Wren was observed in this area. No rare, threatened, or endangered species were found in this community.

The secondary Natural Community Type is early Hardwood Succession. This area is located in the center by center western portion of the parcel. The top canopy is practically 100 percent Pinus taeda saplings. The lower canopy consists of many invasive plant species such as Lespedeza cuneata, Lonicera japonica, and Rubus phoenicolasius making it difficult to walk through. Grasses are present however far less abundant. Several animal species are present in this area. They are White Tail Deer, Grey Fox, Cotton Tail Rabbit, and a Cardinal. No rare, threatened, or endangered species were found in this community.

An even smaller Natural Community Type is located in the northwest portion of the parcel. This is a Dry Mesic Oak-Hickory Forest (Piedmont Subtype). This area consists of mostly Quercus alba, Acer rubrum, and Carya tomentosa. There are a few Pinus taeda and Liriodendron tulipifera, but less prevalent. These trees are much older; however not mature, than the others located on this property. The lower canopy consists mainly of

Vitis rotundifolia. An Eastern Towhee was observed in this area. Also feathers of a Swainson's Hawk and Blue Jay were seen in a transitional area between this community and the Hardwood Succession community. No rare, threatened, or endangered species were found in this community.

Appendix D contains pictures of each community type and bird feathers that were found during the field assessment.

#### 3.13 Hazardous Materials

With the exception of general products used during construction, it is not expected that there will be any hazardous materials stored or used on the site during the construction of the new facilities. Farrell's Apex Self Storage prohibits the storage of any hazardous items or hazardous waste of any kind (Farrell Storage 2014).

#### 4.0 <u>Mitigation Measures</u>

The impervious area increase for the expansion project is addressed by dedicating an offsite property to be un-disturbed.

#### 5.0 State and Federal Permits Required

This project will not require any 404/401 Permits because there are no wetlands located on this site.

#### 6.0 <u>References</u>

- "401 Certification and Isolated Permitting." *Water Quality Permitting*. NCDENR, n.d. Web. 07 July 2014.
- "Apex, NC Cell Towers & Signal Map." *Cell Reception*. 2machines Corp, 2014. Web. 15 July 2014.
- "Chatham County GIS Mapping Website." *Chatham County GIS Mapping Website*. Chatham County, 2008. Web. 03 July 2014.
- "State "State Geologic Map Compilation." *State Geologic Map Compilation*. U.S. Geological Survey, n.d. Web. 07 July 2014.
- "Storage Policies." *Chapel Hill and Apex from Farrell Storage*. Farrell Storage, 2014. Web. 09 July 2014.
- "The Chatham County Zoning Ordinance." *Ordinances & Regulations*. Chatham County, North Carolina, 14 June 2014. Web. 9 July 2014.

# <u>Appendix A</u>

Maps & Figures

Figure 1: Project Location



Figure 2: Structure Location Map



s and Soil Scientists	ste Technology, Inc. Salem St. Suite 203 ex NC 27502 919.859.0669 Agriwaste.com
Engineers an	Agri-Waste T 501 N. Saler Apex N P: 919. www.agr

Structure Location Map

George Farrell Chatham Co., NC Hwy 64 Storage Project These structures are no older than 50 years.



Figure 3: Topographic Map



Topographic Map
-----------------

	eio.
C	ā
= <sup>Z</sup> .	90
c.	C C
E C	ŧ
an	7
athor	2
Э.	Ì
00	





Drawn By: Julie Davidson Reviewed By: Kevin Davidso Date: 8/22/14 Figure 4: Flood Map



\*\*\* Digital flood data is a product of FEMA (Federal Emergency Management Agency. Go to www.fema.gov for details.\*\*\*

Figure 5: Soils Map





Figure 6: Land Use/Land Cover Map



\*\*\*Data source obtained from the Mulit-Resolution Land and Characteristics Consortium (MLRC)) \*\*\*

Figure 7: Zoning Map



Figure 8: Public Lands, Scenic, Recreation, and State Natural Areas Map



\*\*\*MAREA, SNHA, and Recreational Area is GIS data obtained from the Natural Heritage Program website\*\*\*

Figure 9: Areas of Archaeological or Historical Value Map



ological ie Map
f Archaec rical Valu
Areas o or Histo

rell	0.1 10
ge Far	
Georg	Cliai

Hwy 64 Storage Project

Z

This project does not contain items that are of historical significance according to the NC Historic Preservation Office.



Drawn By: Julie Davidson Reviewed By: Kevin Davidso Date: 7/31/14 \*\*\*Data source is from the NC Historic Preservation Office \*\*\*

Figure 10: Chatham County Historical Association Email Re: Historical Significance?

Subject: Re: Historical Significance?
From: Jim and Bev Wiggins <jimerly@embarqmail.com>
Date: 8/15/2014 10:25 AM
To: Julie Peele <jpeele@agriwaste.com>
CC: natalie landry <natalie.landry@chathamnc.org>

Julie--Thanks for the followup. Beverly

From: "Julie Peele" <jpeele@agriwaste.com> To: "Jim and Bev Wiggins" <jimerly@embarqmail.com> Cc: "natalie landry" <natalie.landry@chathamnc.org> Sent: Friday, August 15, 2014 10:18:11 AM Subject: Re: Historical Significance?

Beverly,

I appreciate your time with this. I have talked to Mr. Farrell about the age of the home on the property. He said it was actually moved there in 1993 but the house was built in 1975. By the looks of the house I would agree with this age. Given this information I don't think a site visit would be necessary.

Also, our field evaluation did not show any evidence of a burial site or a grave yard.

Kindly, Julie Davidson

On 8/14/2014 6:35 PM, Jim and Bev Wiggins wrote:

Dear Julie--Per our telephone conversation this morning, I understand that you are doing an EIS on Chatham County parcel 70029.

As I indicated, CCHA does not have a database of historical structures so a reconnaissance is required to identify any man-made features (structures, remains of structures, walls, roads, wells, etc) 50 years old or older. Our interest is in features that may not be in the state database of historic structures, because those may still have local significance. Our goal is to document such features before they are destroyed. If such features are identified on a property scheduled for development, we attempt to make a site visit to photograph them and to learn what we can about them.

I understand that you have identified a metal shed on the northern part of the property that is not more than 50 years old, and a house nearer highway 64 that is of undetermined age. If further inspection indicates that the house is more than 50 years old and might be of interest, please send me pictures of the interior and exterior if possible so that I can determine whether we should visit the site. I see that Jean Fish

owns the surrounding property. Perhaps she would have information that would be useful.

CCHA does keep the county's official cemetery records and those do not show any burial sites on or close by the property. As I noted, the database of burial sites is extensive, but not complete. "New" sites are brought to our attention every year as they are discovered. If your reconnaissance shows any evidence of potential burial sites, please bring those to my attention immediately.

Thank you for contacting us. If we can be of further assistance or if you have information to share with us, please feel free to contact me directly at this personal email address: jimerly@embargmail.com or 919-542-4478.

Beverly Wiggins CCHA Cemetery Project CCHA County Planning Liaison

------ Forwarded message ------From: Julie Peele <<u>jpeele@agriwaste.com</u>> Date: Tue, Jul 29, 2014 at 9:32 AM Subject: Historical Significance? To: history@chathamhistory.org

Hello,

I am doing an Environmental Impact Assessment for a piece of property in Chatham County. One of Chatham County's requirements is to contact the Chatham County Historical Association to see if there are any items of historical significance on this property. Will you please research this location and give me any information available?

If you are using the Chatham County GIS Website then the PIN is 0712-15-7130.000. The owner of the property is KUNAL ENTERPRISES LLC. It is the same location of Farrell's Self Storage : 12820 Us 64 Hwy E, Apex, NC 27523

I appreciate your time.

Julie Davidson

Julie Peele Davidson Agri-Waste Technology, Inc. (AWT) 501 N. Salem St. Suite 203 Apex NC 27502 Office: <u>919.859.0669</u> Direct: <u>919.367.6315</u> Cell/Text: <u>919.971.2326</u> <u>www.agriwaste.com</u> WE ARE ON FACEBOOK Jim and Beverly Wiggins jimerly@embarqmail.com

--Jim and Beverly Wiggins jimerly@embarqmail.com Figure 11: Surface Water and Watershed Map

Engineers and Soil Scientists Bari-Waste Technology, Inc. Soil N. Saeten St. Suite 203 Apex NC 27502	Critical Area
P: 919.859.0669 www.agriwaste.com Watershed and Surface Water Map	
George Farrell Chatham Co., NC Hwy 64 Storage Project	
A drinking water supply is located in the critical area. There are no known ground water quality issues for the project site. This whole map is located in the Cape Fear River Basin.	
Legend Parcel Darrage Device (Previously Installed) Darrage Device (by cell tower)	Lower, New Hope
Surface Water (USGS) Surface Water Ion USGS Surface Mater Ion USGS wtrsd_final FEATURE Critical Area	
RCSA Rver Corridor VS-II BW VS-II BW	
VSHVPA Drawn By: Julie Davidson Reviewed By: Kevin Davidson Date: 8/25/14	960 A1280

\*\*\* Watershed data is provided by Chatham County REST GIS services.\*\*\*

# <u>Appendix B</u>

**Species List** 

#### B1. Species List

The following are plant and animal species identified during a field evaluation of Chatham County parcel 70029 on July 10, 2014. No animal species are endangered/threatened or protected. Several plant species are invasive and indicated by an asterisk.

#### <u>Animal</u>

Bird

- Blue Jay- Cyanocitta cristata
- Carolina Wren- Thryothorus ludovicianus
- Cardinal- Cardinalis cardinalis
- Eastern Towhee- Pipilo erythrophthalmus
- Swainson's Hawk- Buteo swainsoni

#### Mammal

- Eastern Cotton Tail Rabbit- Sylvilagus floridanus
- Eastern Gray Squirrel- Sciurus carolinensis
- Gray Fox- Urocyon cinereoargenteus
- White Tailed Deer- Odocoileus virginianus

#### Amphibians

• Bullfrog (Rana Catesbeiana)

#### <u>Plants</u>

#### Tree

- Acer rubrum Red Maple
- Carya tomentosa Hickory
- Pinus Taeda Loblolly Pine
- Liriodendron tulipifera Tulip Tree
- Liquidambar styraciflua Sweet Gum
- Quercus Alba White Oak

#### Shrubs/Vines

- Rubus villosus- Blackberry
- Rubus phoenicolasius Wine Raspberry\*
- Lespedeza cuneata\*
- Lonicera japonica- Honeysuckly\*
- Juncus tenuis
- Myrica cerifera Wax Myrtle
- Typha latifolia Cattail
- Toxicodendron radicans Poison Ivy

#### U.S. Fish & Wildlife Service

# Endangered Species, Threatened Species, Federal Species of Concern, and Candidate Species,

## **Chatham County, North Carolina**



Updated: 04-29-2014

#### **Critical Habitat Designations:**

**Cape Fear shiner** - *Notropis mekistocholas* - Approximately 4.1miles of the Rocky River from North Carolina State Highway 902 Bridge downstream to Chatham County Road 1010 Bridge; and approximately 0.5river mile of Bear Creek, from Chatham County Road 2156 Bridge downstream to the Rocky River, then downstream in the Rocky River (approximately 4.2river miles) to the Deep River, then downstream in the Deep River (approximately 2.6river miles) to a point 0.3river mile below the Moncure, North Carolina, U.S.Geological Survey Gaging Station. Constituent elements include clean streams with gravel, cobble, and boulder substrates with pools, riffles, shallow runs and slackwater areas with large rock outcrops and side channels and pools with water of good quality with relatively low silt loads.

Federal Register Reference: September 25, 1987, Federal Register, 2: 36034-36039.

Common Name	Scientific name	Federal Status	<b>Record Status</b>
Vertebrate:			
American eel	Anguilla rostrata	FSC	Current
Bachman's sparrow	Aimophila aestivalis	FSC	Current
Bald eagle	Haliaeetus leucocephalus	BGPA	Current
Cape Fear shiner	Notropis mekistocholas	Е	Current
Carolina darter	Etheostoma collis lepidinion	FSC	Current
Carolina redhorse	Moxostoma sp. 2	FSC	Current
Northern long-eared bat	Myotis septentrionalis	Р	Current
Red-cockaded woodpecker	Picoides borealis	Е	Historic
Invertebrate:			

Atlantic pigtoe	Fusconaia masoni	FSC	Current
Brook floater	Alasmidonta varicosa	FSC	Current
Carolina creekshell	Villosa vaughaniana	FSC	Current
Septima's clubtail	Gomphus septima	FSC	Current
Yellow lampmussel	Lampsilis cariosa	FSC	Current
Vascular Plant:			
Buttercup phacelia	Phacelia covillei	FSC	Current
Harperella	Ptilimnium nodosum	Е	Current
Sweet pinesap	Monotropsis odorata	FSC	Current
Virginia quillwort	Isoetes virginica	FSC	Historic
Nonvascular Plant:			

Lichen:

#### **Definitions of Federal Status Codes:**

E = endangered. A taxon "in danger of extinction throughout all or a significant portion of its range." T = threatened. A taxon "likely to become endangered within the foreseeable future throughout all or a significant portion of its range."

C = candidate. A taxon under consideration for official listing for which there is sufficient information to support listing. (Formerly "C1" candidate species.)

BGPA =Bald and Golden Eagle Protection Act. See below.

FSC = federal species of concern. A species under consideration for listing, for which there is insufficient information to support listing at this time. These species may or may not be listed in the future, and many of these species were formerly recognized as "C2" candidate species.

T(S/A) = threatened due to similarity of appearance. A taxon that is threatened due to similarity of appearance with another listed species and is listed for its protection. Taxa listed as T(S/A) are not biologically endangered or threatened and are not subject to Section 7 consultation. See below.

EXP = experimental population. A taxon listed as experimental (either essential or nonessential).

Experimental, nonessential populations of endangered species (e.g., red wolf) are treated as threatened species on public land, for consultation purposes, and as species proposed for listing on private land.

P = proposed. Taxa proposed for official listing as endangered or threatened will be noted as "PE" or "PT", respectively.

#### **Bald and Golden Eagle Protection Act (BGPA):**

In the July 9, 2007 Federal Register( 72:37346-37372), the bald eagle was declared recovered, and removed (de-listed) from the Federal List of Threatened and Endangered wildlife. This delisting took effect August 8,2007. After delisting, the Bald and Golden Eagle Protection Act (Eagle Act) (16 U.S.C. 668-668d) becomes the primary law protecting bald eagles. The Eagle Act prohibits take of bald and golden eagles and provides a statutory definition of "take" that includes "disturb". The USFWS has developed National Bald Eagle Management Guidelines to provide guidance to land managers, landowners, and others as to how to avoid disturbing bald eagles. For mor information, visit <a href="http://www.fws.gov/migratorybirds/baldeagle.htm">http://www.fws.gov/migratorybirds/baldeagle.htm</a>

#### **Threatened due to similarity of appearance(T(S/A)):**

In the November 4, 1997 Federal Register (55822-55825), the northern population of the bog turtle (from New York south to Maryland) was listed as T (threatened), and the southern population (from Virginia south to Georgia) was listed as T(S/A) (threatened due to similarity of appearance). The T(S/A) designation bans the collection and interstate and international commercial trade of bog turtles from the southern population. The T(S/A) designation has no effect on land management activities by private landowners in North Carolina, part

of the southern population of the species. In addition to its official status as T(S/A), the U.S. Fish and Wildlife Service considers the southern population of the bog turtle as a Federal species of concern due to habitat loss.

#### **Definitions of Record Status:**

Current - the species has been observed in the county within the last 50 years.

Historic - the species was last observed in the county more than 50 years ago.

Obscure - the date and/or location of observation is uncertain.

Incidental/migrant - the species was observed outside of its normal range or habitat.

Probable/potential - the species is considered likely to occur in this county based on the proximity of known records (in adjacent counties), the presence of potentially suitable habitat, or both.

# Plants to Avoid in the Southeastern United States

Compiled by Allison S. Weakley and Johnny Randall, Updated 2011

The following is a compilation from invasive exotic plant lists of regional and state agencies in North Carolina, South Carolina, Tennessee, and Virginia. Physiographic region distinctions for the Mountains, Piedmont, and Coastal Plain are not made. The list is based on expert observational data and not on extensive biological research. It is, however, the most accurate approximation of the invasive exotic plant species in the southeastern United States. It is intentionally extensive in order to give the public a reasonable degree of confidence that any landscape plant not listed has a low potential for invasiveness.

This compilation will change as new information is gathered, and we will be adding links to images of each species. You may also want to consult the North Carolina Native Plant Society's <u>Invasive Exotic Species List</u>.

Scientific Name	Common Name	Family
Acer platanoides	Norway maple	Aceraceae
Ailanthus altissima	tree of heaven	Simaroubaceae
Ajuga reptans	bugleweed; common bugle	Lamiaceae
Akebia quinata	chocolate vine; fiveleaf akebia	Lardizabalaceae
Albizia julibrissin	mimosa; Silk tree	Fabaceae
Alliaria officinalis	See Alliaria petiolata	
Alliaria petiolata	garlic mustard	Brassicaceae
Allium vinale	wild garlic; field garlic; crow garlic	Liliaceae

alligatorweed	Amaranthaceae
• ··· · · · · · · · · · · · · · · · · ·	
Amur peppervine;	Vitaceae
porcelain-berry	1.
See Ampelopsis brevipedunci	ilata
tall oatgrass	Poaceae
common wormwood; mugwort	Asteraceae
giant reed; elephant grass	Poaceae
Japanese barberry	Berberidaceae
paper mulberry	Moraceae
	a • 1
balloon vine; love-in-a-puff	Sapindaceae
See Cirsium vulgare	
sedge; Japanese or Asiatic sand sedge	Cyperaceae
See Senna obtusifolia	
Oriental bittersweet	Celastraceae
Soo Lougathomum uula ang	
See Leucanthemum vulgare	
Bush killer	Vitaceae
See Clematis terniflora	
leatherleaf clematis; sweet autumn virgin's bower	Ranunculaceae
common dayflower	Commelinaceae
See Dioscorea oppositifolia	
Chinese yam; cinnamon vine	Dioscoreaceae
Fuller's teasel	Dipsacaceae
common teasel; wild teasel	Dipsacaceae
Cutleaf Teasel	Dipsacaceae
See Dipsacus fullonum ssp. s	ylvestris
Brazilian waterweed; elodea	Hydrocharitaceae
russian olive	Oleaceae
	alligatorweed Amur peppervine; porcelain-berry See Ampelopsis brevipedunce tall oatgrass common wormwood; mugwort giant reed; elephant grass Japanese barberry paper mulberry balloon vine; love-in-a-puff See Cirsium vulgare sedge; Japanese or Asiatic sand sedge See Senna obtusifolia Oriental bittersweet See Leucanthemum vulgare Bush killer See Clematis terniflora leatherleaf clematis; sweet autumn virgin's bower common dayflower See Dioscorea oppositifolia Chinese yam; cinnamon vine Fuller's teasel common teasel; wild teasel Cutleaf Teasel See Dipsacus fullonum ssp. sp Brazilian waterweed; elodea

Elaeagnus pungens	thorny olive	Oleaceae
Elaeagnus umbellata	autumn olive	Oleaceae
Eleutherococcus pentaphyllus	Ginseng shrub; fiveleaf aralia	Araliaceae
Elodea densa	See Egeria densa	
Eragrostis curvula	weeping lovegrass	Poaceae
Euonymus alata	winged spindletree; burning bush	Celastraceae
Euonymus fortunei	wintercreeper; climbing euonymus	Celastraceae
Euphorbia esula	leafy spurge; wolf's milk	Euphorbiaceae
Foeniculum vulgare	sweet fennel	Apiaceae
Glechoma hederacea	groundivy	Lamiaceae
Hedera helix	English ivy	Araliaceae
Hesperis matronalis	dame's rocket	Brassicaceae
Humulus japonicus	Japanese hops	Cannabaceae
Hydrilla verticillata	waterthyme	Hydrocharitaceae
Imperata arundinaceae	See Imperata cylindrica	
Imperata cylindrica	cogongrass	Poaceae
Ipomoea coccinea	red or red star morning glory	Convolvulaceae
Ipomoea hederacea	ivy leaf morning glory	Convolvulaceae
Ipomoea purpurea	common or tall morning glory	Convolvulaceae
Iris pseudacorus	yellow flag; pale yellow iris	Iridaceae
Lapsana communis	common nipplewort	Asteraceae
Lespedeza bicolor	bi-color lespedeza	Fabaceae
Lespedeza cuneata	Chinese or Sericea lespedeza	Fabaceae
Lespedeza sericea	See Lespedeza cuneata	
Ligustrum obtusifolium	border or blunt-leaved pivet	Oleaceae
Ligustrum sinense	Chinese pivet	Oleaceae
Ligustrum villosum	See Ligustrum sinense	
Ligustrum vulgare	European or common privet	Oleaceae
Lonicera x bella	whitebell; Bell's honeysuckle	Caprifoliaceae

Lonicera fragrantissima	January jasmine or sweet- breath-of-spring	Caprifoliaceae	
Lonicera japonica	Japanese honeysuckle	Caprifoliaceae	
Lonicera maackii	Amur honeysuckle	Caprifoliaceae	
Lonicera morrowii	Morrow's honeysuckle	Caprifoliaceae	
Lonicera standishii	Standish's honeysuckle	Caprifoliaceae	
Lonicera tatarica	Tartarian honeysuckle	Caprifoliaceae	
Lotus corniculatus	bird's foot deervetch; bird's foot trefoil	Fabaceae	
Ludwigia uruguayensis	primrose willow; hairy water primrose	Onagraceae	
Lysimachia nummularia	moneywort; creeping jenny	Primulaceae	
Lythrum salicaria	purple loosestrife	Lythraceae	
Lythrum virgatum	European wand loosestrife	Lythraceae	
Mahonia bealei	Oregon grape	Berberidaceae	
Melia azedarach	Chinaberry	Meliaceae	
Melilotus alba	white sweet clover	Fabaceae	
Microstegium vimineum	Nepal grass, Japanese grass	Poaceae	
Miscanthus sinensis	Chinese silvergrass	Poaceae	
Morus alba	white or common mulberry	Moraceae	
Morus papyrifera	See Broussonetia papyrifera		
Mosla dianthera	miniature beefsteak	Lamiaceae	
Murdannia keisak	Asian spiderwort; aneilima	Commelinaceae	
Myriophyllum aquaticum	watermilfoil; parrotfeather	Haloragaceae	
Myriophyllum spicatum	European or spike watermilfoil	Haloragaceae	
Nandina domestica	Nandina	Berberidaceae	
Nasturtium officinale	See Rorippa nasturtium-offic	orippa nasturtium-officinale	
Pastinaca sativa	wild parsnip	Apiaceae	
Paulownia tomentosa	Empress or princess tree	Scrophulariaceae	
Perilla frutescens	beefsteak plant	Lamiaceae	
Persicaria perfoliata	mile-a-minute vine	Poaceae	

Phalaris arundinacea	reed canarygrass	Poaceae
Phragmites australis	common reed	Poaceae
Phyllostachys aurea	golden bamboo	Poaceae
Polygonum cespitosum	bunchy knotweed; Oriental ladysthumb	Polygonaceae
Polygonum cuspidatum	Japanese knotweed	Polygonaceae
Polygonum perfoliatum	mile-a-minute	Polygonaceae
Polygonum sachalinense	giant knotweed	Polygonaceae
Populus balsamifera ssp. balsamifera	balsam poplar; balm of Gilead	Salicaceae
Potamogeton crispus	curly pondweed	Potamogetonaceae
Pseudosasa japonica	arrow bamboo	Poaceae
Pueraria montana	See Pueraria lobata	
Pueraria lobata	kudzu	Fabaceae
Pyrus calleryana	Bradford pear/Callery pear, and other vars.	Rosaceae
Quercus acutissima	sawtooth oak	Fagaceae
Ranunculus ficaria	lesser celandine; lesser or fig buttercup	Ranunculaceae
Raphanus raphanistrum	wild radish; jointed charlock	Brassicaceae
Rhamnus alnus	glossy buckthorn	Rhamnaceae
Rhamnus cathartica	common buckthorn	Rhamnaceae
Rhamnus frangula	See Rhamnus alnus	
Rorippa nasturtium- aquaticum	watercress	Brassicaceae
Rosa multiflora	multiflora rose	Rosaceae
Rubus phoenicolasius	wineberry; wine raspberry	Rosaceae
Rumex acetosella	red sorrel; common sheep sorrel	Polygonaceae
Senna obtusifolia	coffeeweed; sicklepod	Fabaceae
Setaria faberi	Japanese bristlegrass; giant foxtail	Poaceae
Setaria pumila	bristlegrass; yellow or smooth millet	Poaceae

Setaria viridis	green bristlegrass; green millet	Poaceae
Solanum viarum	tropical soda apple; tropical nightshade	Solanace
Sorghum halepense	Johnsongrass	Poaceae
Spiraea japonica	Japanese meadowsweet	Rosacea
Stellaria media	common chickweed	Caryoph
Torilis arvensis	hedge parsley	Apiaceae
Trapa natans	water chestnut	Trapacea
Tribulus terrestris	puncture vine	Zygophy
Tussilago farfara	colt's foot	Asterace
Verbascum thapsus	common mullein	Scrophu
Veronica hederaefolia	ivy leaf speedwell	Scrophu
Viburnum dilatatum	Linden arrowwood	Caprifoli
Vinca major	bigleaf periwinkle	Apocyna
Vinca minor	common periwinkle	Apocyna
Vitex rotundifolia	beach vitex	Apocyna
Wisteria floribunda	Japanese wisteria	Fabacea
Wisteria sinensis	Chinese wisteria	Fabacea

Grayscale Modular

Solanaceae Poaceae Rosaceae Caryophyllaceae Apiaceae Trapaceae Zygophyllaceae Asteraceae Scrophulariaceae Scrophulariaceae Caprifoliaceae Apocynaceae Apocynaceae Apocynaceae Fabaceae Fabaceae

# Appendix C

Site Plans















<u>Appendix D</u>

Photographs

### Field Assessment Photographs July 10, 2014



Figure 1. Managed Loblolly Pine Forest – Pinus taeda



Figure 2. Hardwood Succession



Figure 3. Dry Mesic Oak-Hickory Forest



Figure 3. Drainage Device near Cell Tower



Figure 4. Larger Drainage Device



Figure 5: Swainson's Hawk Feather (left), Blue jay Feather (right)