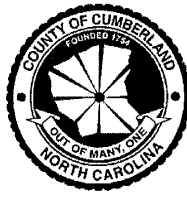


KENNETH S. EDGE
Chairman

W. MARSHALL FAIRCLOTH
Vice Chairman

GLENN B. ADAMS
JEANNETTE M. COUNCIL
CHARLES E. EVANS
JIMMY KEEFE
LARRY L. LANCASTER



CUMBERLAND
★ COUNTY ★
NORTH CAROLINA

BOARD OF COMMISSIONERS

CANDICE WHITE
Clerk to the Board

KELLIE BEAM
Deputy Clerk

MEMORANDUM

TO: Facilities Committee Members (Commissioners Adams, Keefe & Lancaster)

FROM: Kellie Beam, Deputy Clerk to the Board **KB**

DATE: January 30, 2015

SUBJECT: Facilities Committee Meeting – February 5, 2015

There will be a regular meeting of the Facilities Committee on Thursday, February 5, 2015 at 8:30 AM in Room 564 of the Cumberland County Courthouse.

AGENDA

1. Election of Facilities Committee Chairman **(NO MATERIALS)**
2. Approval of Minutes – December 4, 2014 **(Pg. 2)**
3. Consideration of Approval of Request by Kansas City Sausage Company to Connect to the NORCRESS Sewer System **(Pg. 8)**
4. Other Items of Business **(NO MATERIALS)**

cc: Board of Commissioners
County Administration
County Legal
County Department Head(s)
Sunshine List

CUMBERLAND COUNTY FACILITIES COMMITTEE
COURTHOUSE, 117 DICK STREET, 5TH FLOOR, ROOM 564
DECEMBER 4, 2014 - 8:30 A.M.
MINUTES

MEMBERS PRESENT: Commissioner Charles Evans
Commissioner Kenneth Edge

OTHER COMMISSIONERS
PRESENT: Commissioner Glenn Adams
Commissioner Larry Lancaster

OTHERS PRESENT: Amy Cannon, County Manager
James Lawson, Deputy County Manager
Melissa Cardinali, Assistant County Manager for Finance /
Administrative Services
Sally Shutt, Governmental Affairs Officer
Jeffery Brown, Engineering and Infrastructure Director
Vicki Evans, Finance Accounting Manager
Buck Wilson, Public Health Director
Rod Jenkins, Deputy Health Director
Candice White, Clerk to the Board
Kellie Beam, Deputy Clerk to the Board
Press

Commissioner Kenneth Edge called the meeting to order.

1. APPROVAL OF MINUTES – NOVEMBER 6, 2014 REGULAR MEETING

MOTION: Commissioner Edge moved to approve the minutes.
SECOND: Commissioner Evans
VOTE: UNANIMOUS (2-0)

2. CONSIDERATION OF APPROVAL OF REQUEST TO INSTALL LED SIGN
FOR PUBLIC HEALTH CENTER

BACKGROUND:

State money is available to purchase an LED sign for the Public Health Center. There is no required County match for the cost of the sign. If the County approves the LED sign, the next step will be to request approval from the City of Fayetteville. The project needs approval from Cumberland County and the City of Fayetteville to be completed.

The Cumberland County Department of Public Health has an opportunity to purchase an LED sign for the community. The purchase of this sign will be funded entirely with state

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dollars (cost not to exceed \$54,000). This will include delivery and set up of the sign. The proposed location of this sign is on Ramsey Street, approximately fifty (50) yards from Peace Street. The sign will stand sixteen (16) feet tall with the bottom of the sign ten (10) feet from the ground. The sign will have a decorative post with the Cumberland County logo. The sign will be easily seen by individuals traveling Ramsey Street in either direction. There will be two to four lines (full color) of information on the LED sign, as well as the permanent portion of the sign that says Cumberland County Public Health. It can be programmed via computer from within the Health Department building. Messages can be programmed up to a year in advance.

The sign will bring major awareness to the community about day-to-day Public Health, to include:

- Programs and projects
- Board of Health announcements
- Public Health laws
- Public Health website
- General hours of the Health Department
- Holiday schedule

The sign will provide a Public Health emergency and/or disaster notification, as well as general neighborhood emergency notifications to include:

- Disease outbreaks
- Contaminated areas – chemicals
- Flood zones – well contamination
- Weather alerts
- Shelter information – locations
- Natural disasters
- Amber and silver alerts
- Other

The messages on the sign will be 24 hours a day, 7 days a week. Tens of thousands of citizens of Cumberland County will travel past the sign every day. The cost of this coverage with other media outlets would be astronomical and unaffordable.

Benefits of the sign include:

- A healthier and safer community
- Potential for more revenue for the Health Department

RECOMMENDATION/PROPOSED ACTION:

Approve the installation of an LED sign for the Public Health Center located at 1235 Ramsey Street and forward to the Board of Commissioners for its consideration at their December 15, 2014 meeting. In addition, since this is new money, a budget revision will need to be approved.

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Buck Wilson, Public Health Director, reviewed the background information and recommendation recorded above and responded to questions. Mr. Wilson stated the State grant funds of \$54,000 are required to be spent by January 2015 or will need to be sent back to the State.

Jeffery Brown, Engineering and Infrastructure Director, stated the City of Fayetteville will require three permits which include: a sign permit, a building permit for the footing design and an electrical permit for the electrical work. Mr. Brown stated there is now a governmental exemption for signs in the Unified Development Ordinance (UDO) which will allow the County to move forward with the installation of an LED sign without having to go to the Board of Adjustment for a variance on the location and height of the LED sign.

MOTION: Commissioner Evans moved to recommend to the full board approval of the installation of an LED sign for the Public Health Center located at 1235 Ramsey Street.
SECOND: Commissioner Edge
VOTE: UNANIMOUS (2-0)

3. CONSIDERATION OF APPROVAL OF LEASE RENEWAL FOR NC DEPARTMENT OF AGRICULTURE AND CONSUMER SERVICES FOR OFFICE SPACE LOCATED IN THE CHARLIE ROSE AG-EXPO CENTER

BACKGROUND:

The North Carolina Department of Agriculture (NCDA) and Consumer Services currently leases 368 square feet of office space located within the Charlie Rose Ag-Expo Center from Cumberland County at a rate of \$12/SF. This existing lease is a three year lease which is set to expire on December 31, 2014.

County staff reached out to representatives from NCDA to see if they were interested in renewing the lease. County staff was later notified that NCDA was indeed interested in continuing to lease the space that they are currently occupying. NCDA representatives were then informed that their present lease rate of \$12/SF was no longer in line with the County's current lease rate, as two leases had been renewed earlier in the year with a lease rate of \$15/SF where the County provides janitorial services and utilities. NCDA representatives communicated back to County staff that they were in agreement with the increased lease rate and to move forward with renewing the lease.

No other changes to the lease other than the lease rate are being recommended at this time.

RECOMMENDATION/PROPOSED ACTION:

The Engineering and Infrastructure Director and County Management recommend that the Facilities Committee vote to approve the lease rate of \$15/SF for a period of three

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years and recommend to the Board of Commissioners to approve the lease renewal following the approval of the County Attorney.

Mr. Brown reviewed the background information and recommendation recorded above.

MOTION: Commissioner Edge moved to recommend to the full board approval of the lease renewal for NC Department of Agriculture and Consumer Services for office space located in the Charlie Rose Ag-Expo Center following the approval of the County Attorney at a lease rate of \$15/SF for a period of three years.

SECOND: Commissioner Evans

VOTE: UNANIMOUS (2-0)

4. CONSIDERATION OF APPROVAL OF LAND PURCHASES FOR OVERHILLS SEWER PROJECT

BACKGROUND:

On April 14, 2014 in a called special meeting the Board of Commissioners acting as the Overhills Park Water and Sewer District governing board approved the letter of conditions presented by USDA Rural Development for a loan and grant in the amount of \$3,322,000 for the construction of a much needed sewer system within the Overhills Park Subdivision. In order to construct the sewer system as designed the County must purchase two vacant lots that are currently owned by W.S. Wellons Corporation of Spring Lake. One lot is located at 3004 Collingwood Street and the other lot is located at 2410 Brinkley Drive.

County staff reached out to Mr. Billy Wellons several months ago about the need to purchase the two vacant lots for the construction of the sewer project. After several conversations, it was determined that an appraisal needed to be completed for each of the lots. Therefore, the County obtained the services of Roger Holmes to complete the requested appraisals. Mr. Holmes concluded that each lot currently has a value of \$2,500. Mr. Wellons was provided the appraisals with an offer to purchase each lot at the appraised value. After reviewing the appraisals Mr. Wellons felt that the value assigned to each lot was too low and that he in turn wanted to provide an in depth review on his own. After a few weeks, Mr. Wellons contacted County staff and offered to sell the lot on Collingwood Street for \$4,000 and offered to sell the lot on Brinkley Drive for a price of \$5,000 as is or for \$4,000 if he removed the trees prior to selling the lot.

The acquisition of these lots is critical for the construction of the proposed sewer project. The lot on Collingwood Street is needed for a lift station that will pump the collected

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wastewater on the north side of Manchester Road back to the south side into a proposed gravity line. The gravity sewer system on the south side of Manchester Road will cross the lot on Brinkley Drive to a dedicated easement owned by the Town of Spring Lake where the second lift station will be constructed. The cost of trying to redesign the system will far outweigh the additional cost above the appraised value of the lots. Not to mention, land still will need to be acquired and the majority of the vacant lots within the subdivision are owned by W. S. Wellons Corporation. USDA Rural Development has established milestone dates for the County to meet in order to still qualify for the loan and grant money that has been offered. The Board has the power of eminent domain; however the time necessary to complete this process could jeopardize the funding that has been allocated for the project. Again, the cost of this process would exceed the additional cost above the appraised value.

As previously stated, the lot on Brinkley Drive will be utilized to access the dedicated easement where the lift station is to be constructed. If the option were selected to purchase the lot for \$4,000, then the County would most likely have to spend additional money during construction to re-establish some sort of vegetation on the lot. So with that said, it would be more beneficial for the County to purchase this lot for the asking price of \$5,000 and utilize the existing trees as a buffer between the adjacent lots.

RECOMMENDATION/PROPOSED ACTION:

The Engineering and Infrastructure Director along with County Management recommend that the Facilities Committee approve the purchase of the lot on Collingwood Street for the asking price of \$4,000 and to approve the purchase of the lot on Brinkley Drive for the asking price of \$5,000 and forward this to the Board of Commissioners for its consideration at their December 15, 2014 meeting.

Jeffery Brown, Engineering and Infrastructure Director, reviewed the background information and recommendation as recorded above. Mr. Brown stated it he County purchases the lots as recommended above he would like to bid the project out in February or March of 2015 and begin construction in the spring of 2015.

Commissioner Adams asked if there was any counter offering done with Mr. Wellons. Mr. Brown stated the recommended purchase price listed above is the counter offer. Mr. Brown further stated he feels the County has done its due diligence in trying to get the purchase price of the lots as low as possible.

MOTION: Commissioner Evans moved to recommend to the Overhills Water Sewer District Governing Board approval of the purchase of the lot on Collingwood Street for the asking price of \$4,000 and approval of the purchase of the lot on Brinkley Drive for the asking price of \$5,000.

SECOND: Commissioner Edge

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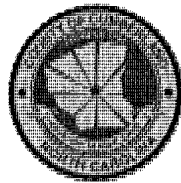
VOTE: UNANIMOUS (2-0)

5. OTHER ITEMS OF BUSINESS

Mr. Brown stated the County just received good news that the U.S. Department of Agriculture Rural Development (USDA) will fund the installation of a sewer system within the Bragg Estates Water and Sewer District, a neighborhood along Vass Road north of Spring Lake. Mr. Brown further stated the project is expected to cost approximately \$2 million and a USDA grant will cover up to \$1,453,000. Mr. Brown further explained the County will also receive a \$497,000 loan for the project and contribute \$50,000 of county funding.

Mr. Brown stated the USDA staff will be at the December 15th Board of Commissioners meeting to present the letter of conditions for review and approval. Mr. Brown stated this is a much needed project to be able to address ongoing sewer issues in a subdivision that really needs assistance.

MEETING ADJOURNED AT 8:58 AM.



CUMBERLAND
★ COUNTY ★
NORTH CAROLINA

ENGINEERING & INFRASTRUCTURE DEPARTMENT
PUBLIC UTILITIES DIVISION

MEMO FOR THE AGENDA OF THE
FEBRUARY 5, 2015 MEETING OF THE FACILITIES COMMITTEE

TO: FACILITIES COMMITTEE
FROM: JEFFERY P. BROWN, PE, E & I DIRECTOR
THROUGH: AMY H. CANNON, COUNTY MANAGER
DATE: JANUARY 30, 2015
SUBJECT: REQUEST BY KANSAS CITY SAUSAGE COMPANY TO
CONNECT TO THE NORCRESS SEWER SYSTEM

Requested by: JEFFERY P. BROWN, PE, E & I DIRECTOR
Presenter(s): JEFFERY P. BROWN, PE, E & I DIRECTOR

Estimate of Committee Time Needed: 30 MINUTES

BACKGROUND:

In the fall of 2014, staff from the Engineering and Infrastructure Department was contacted by a representative from the Kansas City Sausage Company, LLC about the possibility of connecting to the NORCRESS sewer system. This is the former Martin's Abattoir and Wholesale Meats located in Sampson County just across the Cumberland County line off of Highway 13 (see attached map). This meat processing plant had been in operation for over 50 years up until it closed in 2014. Kansas City Sausage Company would like to reopen this plant by December of 2015. Upon receiving this request, a meeting was held with the NORCRESS Advisory Board to inform them of the request that had been made and to seek their thoughts on the possible connection. After much discussion, it was determined that Kansas City Sausage Company should be directed to complete a feasibility study of this proposed connection and how it would impact the NORCRESS sewer system.

Kansas City Sausage Company, LLC acquired the services of Hobbs Upchurch Associates out of Southern Pines, NC to complete a Preliminary Engineering Report (PER) to determine the impact that their proposed connection would have on the NORCRESS system. This PER document has been completed and submitted to the County staff for review. A copy of this report has been attached for your review with the exceptions of appendixes C-E which were County documents that the engineer included within the report. The PER document has been sent to PWC for review and approval as well. PWC will set the wastewater concentrations that Kansas City Sausage Company is allowed to discharge into the system and permit the facility as an industrial user if they are authorized to connect to the NORCRESS sewer system by the Cumberland County Board of Commissioners.

Engineering & Infrastructure Staff has requested specific information from Hobbs Upchurch Associates as well as the Kansas City Sausage Company, LLC that should be available to be presented during the meeting on February 5th.

RECOMMENDATION/PROPOSED ACTION:

The Facilities Committee is being asked to provide County staff their thoughts on allowing Kansas City Sausage Company to connect to the NORCRESS Sewer System and to provide direction on how County staff should move forward with handling the request.

PRELIMINARY ENGINEERING REPORT

PROPOSED NEW SANITARY SEWER SERVICE OLD MARTIN'S ABBATOIR PROCESSING FACILITY GODWIN, N. C.

JANUARY 21, 2015
(Revised 01/23/2015)

PREPARED FOR:

KANSAS CITY SAUSAGE COMPANY, LLC
1600 Martin Road
Godwin, NC 28344



Prepared by:



Hobbs Upchurch Associates

135 W. Connecticut Ave.
Southern Pines, NC 28387

Tel. (910) 692-5616
Fax. (910) 692-7342

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4.0 PROJECTYED COST FOR NEW INFRASTRUCTUREPage 7

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6.0 SUMMARY AND CONCLUSIONSPage 9

APPENDIX A

Maps

APPENDIX B

Engineers Estimate of Probable Construction Cost

APPENDIX C

**Water and Sewer Districts, Cumberland County: Ordinance of the Public Utilities
Division**

NORCRESS Sanitary Sewer Rate Schedule (REV. 4/22/2014)

APPENDIX D

Fayetteville PWC Sanitary Sewer Surcharges

APPENDIX E

Marziano & McGougan: Falcon Force Main Investigation

1.0 INTRODUCTION

The purpose of this report is to evaluate the feasibility of providing sanitary sewer service to the old Martin's Abattoir and Wholesale Meats facility. The facility is located on approximately 75.5 acres at the intersection of NC Highway 13 (Fayetteville Highway) and Martin Road in Sampson County, near the Cumberland County border at South River. A map of the property is shown as Figure 1 in Appendix A.

The facility was engaged in the slaughter of bovine cattle to provide meat to other processing facilities to be ground into hamburger for fast food restaurant usage. A reliable, consistent supply of cattle within a reasonable distance to the facility became increasingly more difficult to secure, and the facility closed its slaughtering operations resulting in the loss of approximately 150 jobs to the local community. Processing and rendering of animal by-products from dead stock and other processing facilities has continued with a minimal reduced staff of approximately 22 employees.

An agreement was reached for the sale of the facility to Kansas City Sausage Company, LLC in partnership with Smithfield Foods. The new ownership has continued the rendering operations and desires to resume slaughtering operations, using swine in lieu of bovine cattle. The resumption of slaughtering operations would mean that 100 to 125 of the jobs lost to the closing of the previous slaughtering operation would be reclaimed, resulting in an economic stimulus to the immediate area. As part of the process of resuming slaughtering operations, Kansas City Sausage Company wishes to discontinue land application of their wastewater effluent and construct the necessary infrastructure to convey discharge to the public sewer system. The closest available publicly owned sewer system is owned by Cumberland County, NC and operated and maintained by the Fayetteville Public Works Commission (PWC). This system is the North Cumberland Regional Sewer System (NORCRESS), which incorporates facilities in the towns of Falcon, Godwin and Wade.

2.0 EXISTING FACILITIES

2.1 Martin Facility

The current Martin facility is served by a system of wastewater lagoons and a holding pond prior to land discharge by spray irrigation. The first lagoon has a volume of 586,000 gallons. The second lagoon has a volume of 1,675,000 gallons. Each lagoon is approximately 10-feet deep. The second lagoon discharges to a storage lagoon with a volume of approximately 2.9 million gallons. Effluent from this lagoon is land applied to an adjacent spray field. The current discharge from the facility is approximately 20,000 gallons per day. The first two lagoons are clay lined and are equipped with mechanical aerators. Basin No. 1 is equipped with four mechanical floating aerators and Basin No. 2 has two floating aerators. Wastewater is land applied within the requirements of the North Carolina Department of Environment and Natural Resources (NCDENR) under a Non-Discharge Permit number WQ0007240. The current permit allows for the land application of 110,000 gallons per day on roughly 76.4 acres. Permitted discharge rates vary, as there are 14 discharge zones for spray irrigation. The rate varies from 1/3 inch per week to 1-inch per week.

2.2 NORCRESS System

As previously mentioned, the NORCRESS system consists of infrastructure to serve the Towns of Falcon, Godwin and Wade, N. C., and is permitted for a discharge of up to 400,000 gallons per day to the PWC wastewater facility for treatment. The system was constructed and put into operation in 2005. The capacities of the existing system downstream of the proposed tie-in must be evaluated in order to determine that there is adequate capacity to accept the additional flow proposed by the Kansas City Sausage operations. The NORCRESS system is permitted to discharge a maximum of 400,000 gallons per day to PWC for treatment. Flows are primarily domestic in nature and are a combination of residential and commercial flows. Flow meter readings for the Wade #2 Pump Station are shown on the following table:

Date Read	Total Gallons	Days	Gallons / Day
12/26/2013	2,856,132		
1/27/2014	4,628,975	32	144,655
2/26/2014	4,370,431	30	145,681
3/26/2014	3,857,095	28	137,753
4/25/2014	4,019,375	30	133,979
5/27/2014	4,679,239	32	146,226
6/26/2014	3,674,740	30	122,491
7/25/2014	3,428,470	29	118,223
8/26/2014	3,510,887	32	109,715
9/26/2014	4,223,730	31	136,249
10/27/2014	4,412,997	31	142,355
11/26/2014	3,734,937	30	124,498
12/24/2014	3,696,571	28	132,020

The number of taps installed, connected and not connected for each Community are shown below:

Falcon	Godwin	Wade
Total Taps Installed – 181	Total Taps Installed – 91	Total Taps Installed – 342
Connected Users – 112	Connected Users – 40	Connected Users – 217
Not Connected – 69	Not Connected – 51	Not Connected – 125

There are a total of 614 taps installed. Of the installed taps, 369 are connected to the system, while the remaining 245 taps are not connected, but capacity must be reserved.

Of the 369 taps that are connected, 18 taps generate a higher flow than typical residential or commercial taps. The largest of these is for Martin’s Meats.. Based on billing records for 2014, it was determined that the Average Daily Flow from Martin’s Meats is 40,552 gallons per day.

The next largest user is the Falcon Children’s Home, which discharges wastewater through 15 separate taps. Billing records were provided from Cumberland County, documenting an average daily flow from Falcon Children’s Home of 7,181 gallons per day for the calendar year 2014.

The remaining “bulk” users are two schools with one tap each. Again, billing records were provided by Cumberland County for calendar year 2014. Eastover Central School discharged an average of 1,107 gallons per day and District 7 School discharged 1,159 gallons per day.

Based on flow meter readings at the Wade #2 Pump Station, the highest recorded flow to PWC was 146,226 gallons per day on average, occurring in May, 2014. The Average Daily Flow for 2014 was 132,820 gallons per day. The “bulk users” documented above contribute a total of 49,999 gallons per day through 18 taps. The remaining 82,821 gallons per day can be considered the Average Daily Flow generated from a “standard” or “typical” tap. Based on this information, the Average Daily Flow from a typical tap in the NORCRESS system is 236 gallons per day.

It is necessary to calculate the total flow that has been committed to in the NORCRESS system. On average, 132,820 gallons per day are being discharged, including high flow users from 369 taps. Falcon Children’s Home has requested connection of their final tap and it is projected that this tap will generate 3,640 gallons per day. The flow has been committed to the remaining 244 taps can be projected to be 57,584 gallons per day, based on the 236 gallons per day per tap calculated above. From this information, the NORCRESS system needs 194,044 gallons per day to honor flow commitments already made.

The total design flow to the Falcon pump station is 70,000 gallons per day. The Falcon pump station is rated for a discharge of 350 gallons per minute. Actual pumping tests have documented the pumps capable of delivering up to 376 gallons per minute. The Falcon pump station, known as Lift Station #92 in the PWC system is discharging approximately 68,000 gallons per day. This information comes from an analysis of the Falcon Pump Station by Marziano and McGougan, P.A. dated 9/19/2012. The flows were documented during a five week period prior to June 1, 2012. The complete report of the Falcon Pump Station Investigation is included as Appendix E. Based on existing commitments, combined with existing flows, the projected flow to the Falcon Pump Station would be 87,924 gallons per day.

Existing Flow:		68,000 gpd
Future Flow	69 taps @ 236 gpd	16,284 gpd
Future flow FCH		3,640 gpd
<hr/>		
Total		87,924 gpd

The Marziano and McGougan investigation documents several issues surrounding the operation

of the pump station, mainly resulting from low influent flow with respect to pump station capacity. Problems that have been documented in the system include solids being deposited in the force main due to insufficient velocity, excessive detention times, which result in anaerobic conditions which lead to odor problems and corrosion, and uncharacteristic pressure and pump rate variations, thought to be associated with inadequate flows, which could possibly lead to premature wear and/or failure of pumps due to operation outside of their designed range. A chemical feed system has been installed to diminish problems with odor. Additional air release and vacuum breaker valves have been installed to address abnormal pressure readings and pumping rates. The pumps were reconfigured to run in series, hoping to increase the pumping rate to a point closer to the intended design. This reconfiguration eliminates the redundancy required in the design of pump stations that insure the ability to continue operation in the event of a pump failure. The addition of the air/vacuum valves and reconfiguration of the pumps has given mixed results with respect to solving problems associated with the station.

3.0 PROPOSED IMPROVEMENTS

3.1 Proposed Wastewater Flows and Loadings

It is anticipated that once slaughter operations have resumed, the facility will process between 700 and 1,000 head of swine per day. The wastewater flows from the resumed operations are projected to total 200,000 gallons per day once the facility is operating on a steady schedule. Characteristics of the proposed wastewater are expected to be as follows:

BOD5	1,000mg/l
TSS	300mg/l
Ammonia	300mg/l
TKN	375mg/l

3.2 Proposed Infrastructure Improvements

It is proposed that a new pump station and force main be constructed to convey effluent to the North Cumberland Regional Sewer System (NORCRESS). Final approval for this connection will need to be obtained from the Cumberland County Board of Commissioners. The proposed pump station would be constructed at the base of the dike of the secondary aeration basin. This pump station would be capable of a discharge of 320 gallons per minute. The station would

consist of duplex submersible pumps in a 8-foot diameter wetwell, which should be approximately 15 to 18 feet deep. Each pump would be driven by electric motors in the 25 to 30 horsepower range. Three phase 230 or 460 volt power would be required. The pump station would be equipped with a standby emergency generator of sufficient capacity to operate the station during periods of electrical power outage. The estimated generator size is 50KW.

The proposed forcemain is 8-inch diameter. It is proposed that the force main be routed through the facilities property to Old Park Road. The main would cross South River by means of directional bore, and proceed to Highway 82. The forcemain would continue along Highway 82 until it terminates with a tie-in to an existing manhole at the end of a 10-inch gravity sewer that is part of the NORCRESS system in the Town of Falcon. See Figure 2 in Appendix A for a map of the proposed routing.

Wastewater would be conveyed by the existing 10-inch gravity sewer and flow to the Town of Falcon pump station. From this pump station, flow would continue through an 8-inch forcemain to the Town of Wade, NC pump station in Cumberland County. Wastewater is transported from the Wade pump station to the Fayetteville Public Works Commission Sewer System via an existing 10-inch diameter forcemain.

The existing 10-inch gravity should have a minimum slope of 0.0028 ft./ft., which would provide for a capacity of nearly 1.0 MGD, which is adequate for both existing flow and the proposed flow from the Old Martin facility.

The Falcon pump station, as previously noted was designed for a flow of 350 gallons per minute. As previously noted, the design flow to the Falcon pump station was 70,000 gallons per day or 49 gallons per minute. The pump station will need to have a capacity for up to 87,924 gallons per day plus the additional flow from the proposed Kansas City Sausage expansion. A standard peaking factor of 2.5 applied to the Average Daily Flow of 87,294 gallons per day, then converted to gallons per minute results in a design flow to the existing Falcon Station of 151 gallons per minute. The combination of the existing flow and the proposed flow of 320 gallons

per minute from the Old Martin facility would require a capacity of 471 gallons per minute for the Falcon Station. Based on this, the Falcon Pump Station would require an upgrade to 475 gallons per minute, including replacement of pumps and electrical components.

The Wade #2 station has a capacity of 700 gallons per minute. Assuming a worst case scenario, whereby peak flows reached the station at the same time, the allocated system flow of 194,044 gallons per day would equate to a peak hourly flow of 337 gallons per minute based on a peak factor of 2.5. Adding the proposed flow of 320 gallons per minute from Kansas City Sausage would elevate peak flow in the Wade Pump Station to 657 gallons per minute, which is comfortably below the design rate of 700 gallons per minute. The Wade Pump Station would, therefore, not require upgrades to accommodate this project.

It should be noted that there is a wide range of flexibility that can be incorporated into the design of the proposed pump station and force main. This flexibility may be beneficial in reducing impact and excess strain on the existing NORCRESS system. For instance, flexibility is available as far as the times that wastewater could be discharged from the proposed pump station. Discharges could be timed such that impacts to existing peak flow rates would be minimal.

4.0 PROJECTED COST FOR NEW INFRASTRUCTURE

The Preliminary Engineers Opinion of Probable Cost for constructing the new system is shown as Figure 3 at the end of this report. The projected costs for construction are approximately \$876,500.00. Modifications to the existing Falcon Pump Station are estimated at \$85,000.00. The estimate is broken down item by item, with anticipated quantities and unit costs.

Design fees are estimated to be \$82,400.00. Resident Project Representative fees, or fees for construction observation are estimated to be \$50,500.00. The design fee includes surveying and mapping services, including preparation of any required easement maps. Services for wetlands delineation or archaeological investigations are excluded.

It is possible that Kansas City Sausage Company may be able to offset a significant portion of the total project cost by means of available grant funds. Grants are available, in particular, for economic development that increases employment for the area. Considerations are made on a case by case basis. Preliminary findings indicate that as much as \$12,500.00 per each new job created may be available, provided certain criteria are met, up to a maximum grant of \$500,000.00.

5.0 PROJECTED START-UP AND MONTHLY OPERATING COSTS

Based on the NORCRESS Commercial Sanitary Sewer Rate Schedule, the Usage Charge is \$7.00 per 1000 gallons. Additionally, there is a Debt Charge of \$1.00 per 1000 gallons and a Lift Station Maintenance Fee of \$2.00 per 1000 gallons. Sewer flow would be measured by the installation of an 8-inch meter on the force main. The monthly NORCRESS meter fee is \$46.70 per month. The fee to the Town of Falcon would be \$7.50 per month. The Fayetteville Public Works Commission imposes a surcharge on industrial wastewater with specific pollutants that are above maximum thresholds. The surcharges are detailed in the Appendix, and the anticipated charges are as follows (based on anticipated flows of 200,000gpd):

BOD ₅ (700mg/l excess)	32,507lbs excess per month @ \$311.50/1000lbs	\$10,125.93
TSS	No anticipated surcharge	
TKN (325mg/l excess)	16,274lbs excess per month @ \$685.60/1000lbs	\$11,157.45

The resulting total wastewater bill for the total permitted flow at the anticipated wastewater characteristics would be \$81,337.58 per month. It is anticipated that the cost of operating the pump station on a monthly basis would be \$685.71, for a total monthly wastewater cost of \$82,023.29. A tap fee, estimated to be \$60,310.00 would be required up front to tie into the NORCRESS system

It may be possible to reduce the surcharges to PWC substantially or in their entirety by utilizing the existing aerated lagoons for pre-treatment. By oxygenating the raw wastewater, BOD and TKN can be reduced. It is beyond the scope of this PER to analyze the existing lagoons and to

what extent that they can treat effluent, however in a worst case scenario, an upgrade of aerators and the addition of baffles to the first lagoon may be warranted in this regard. Assuming that the total horsepower requirements of the aerators was 60hp, for example, and assuming electrical charges of 12 cents per kilowatt hour, it might be possible to eliminate surcharges to PWC for the substitution of \$3,888.00 per month in electrical charges. This would reduce the monthly wastewater disposal cost to \$64,627.91, provided the wastewater characteristics could be reduced to less than 300mg/l for BOD and 50mg/l of TKN.

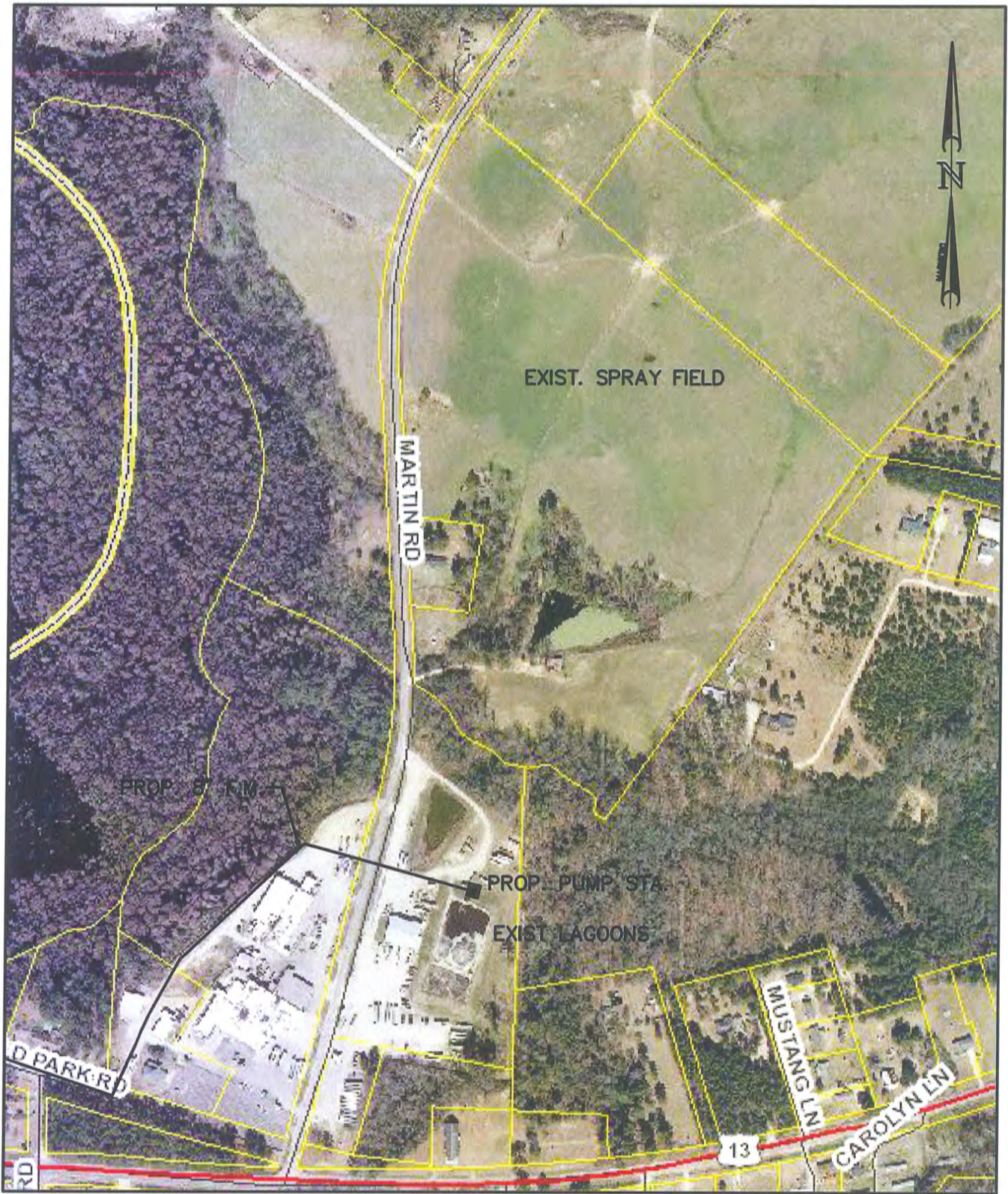
6.0 SUMMARY AND CONCLUSIONS

In conclusion, it is recommended that Kansas City Sausage Company proceed with plans to implement the proposed 320 gallon per minute pump station and 14,700 lf of 8-inch force main to discharge to the NORCRESS sewer system. It is recommended that the existing lagoons be evaluated to determine to what extent that they can be used to reduce contaminant loading of effluent being discharged, thereby reducing, possibly substantially, the surcharges to the monthly wastewater fees. It is estimated that the design phase of the proposed pump station and force main will require 120 days to complete. Design of modifications to the existing lagoons would require additional time. Construction of the proposed pump station and force main would require approximately 180 days to complete.

It is emphasized that the implementation of this project should have a positive impact on the NORCRESS system, by increasing flows in the Falcon portion of the system, which has consistently displayed operational problems due to low flows. Chemical costs at the Falcon Pump Station would likely be reduced. Problems due to sedimentation in the Falcon force main would likely be eliminated, and problems with odor and cycling at the Falcon station would likely be eliminated or reduced substantially.

It also bears emphasis that a great deal of flexibility can be incorporated into design of the proposed pump station and force main to minimize any possible negative effects to existing infrastructure that would arise from discharges during traditional peak hours.

APPENDIX A



KANSAS CITY SAUSAGE CO, LLC
OLD MARTIN'S ABBATOIR FACILITY

SAMPSON COUNTY, NC



Hobbs Upchurch Associates
 engineering | planning | surveying

135 W. Connecticut Ave. | Southern Pines, North Carolina 28387
 P: (910) 692-6616 | F: (910) 692-7342
 License Number: C-0454 www.hobbsupchurch.com

DATE: JAN. 2015

JOB No.: CU1501

SCALE: 1" = 500'

SHEET NO. **1**



KANSAS CITY SAUSAGE CO., LLC
PROPOSED FORCE MAIN ROUTE

SAMPSON COUNTY, NC

HJ **Hobbs Upchurch Associates**
 engineering | planning | surveying

135 W. Connecticut Ave. | Southern Pines, North Carolina 28387
 P: (910) 692-6616 | F: (910) 692-7342
 License Number: C-0464 www.hobbsupchurch.com

DATE: JAN. 2015

JOB No.: CU1501

SCALE: N.T.S.

SHEET NO. **1**

APPENDIX B

**KANSAS CITY SAUSAGE COMPANY, LLC
PROPOSED PUMP STATION AND FORCEMAIN**

ENGINEER'S ESTIMATE OF PROBABLE CONSTRUCTION COST

Item #	Item Description	Qty	Unit	Unit Price	Cost
1	Mobilization	1	LS	\$15,000.00	\$15,000.00
2	Clearing and Grubbing	1	AC	\$10,000.00	\$10,000.00
3	8" PVC Forcemain	14060	LF	\$23.00	\$323,380.00
4	8" DIP Forcemain	240	LF	\$65.00	\$15,600.00
5	16" Steel Casing Bore and Jack	210	LF	\$250.00	\$52,500.00
6	8" Restrained Joint PVC Directional Drill	400	LF	\$125.00	\$50,000.00
7	Pump Station	1	EA	\$225,000.00	\$225,000.00
8	Falcon PS Modifications	1	LS	\$85,000.00	\$85,000.00
9	Standby Generator	1	EA	\$32,500.00	\$32,500.00
10	Combination Air/Vac. Valve w/ Manhole	2	EA	\$3,500.00	\$7,000.00
11	8" Plug Valve	4	EA	\$1,150.00	\$4,600.00
12	Remove/Replace Asphalt Paving	100	SY	\$45.00	\$4,500.00
13	Remove/Replace Concrete Paving	50	SY	\$65.00	\$3,250.00
14	Seeding	3	AC	\$1,500.00	\$4,500.00
15	Erosion Control	1	LS	\$7,500.00	\$7,500.00
16	Select Fill Material	50	CY	\$30.00	\$1,500.00
17	Testing	1	LS	\$15,000.00	\$15,000.00
18	Project Closeout	1	LS	\$25,000.00	\$25,000.00
	Contingency				\$88,183.00
	Sub-Total				\$970,013.00
	Engineering and Inspection				\$132,900.00
	TOTAL				\$1,102,913.00