

5.2.4 ALTERNATIVE NO. 4: DECOMMISSION EXISTING WWTP, PUMP TO SANFORD, REGIONAL WWTP

In this alternative, there would be three capacity steps as shown in **Figure 5.4**. The existing WWTP would be decommissioned, but the Pittsboro discharge permit would remain in a dormant status to allow future activation once the regional WWTP is constructed. The new pump station and force main to the Sanford WWTP would be constructed and the station be used as the only wastewater infrastructure for 6 to 8 years. The pump station capacity and force main route would be the same as described in Alternative 2. The Town would need to make arrangements with 3M to terminate the existing reuse water contract or find other means to supply this water. This would likely require the Town to provide potable water to 3M at a discounted rate.

A new regional WWTP would need to be constructed once the capacity of the pump station is reached. This plant would be built in two 1.25 MGD steps to keep up with growth. Discharge of 2.5 MGD to the Haw River would require a permit modification shifting approximately 0.5 MGD of flow from the Robeson Creek outfall to the Haw River outfall. The new regional WWTP would need to meet final total Nitrogen limits of 3.0 mg/L. The regional WWTP, discharge line and outfall would be constructed in the same location as was shown for Alternatives 2 and 3.

5.3 PRESENT WORTH ANALYSIS

A present worth analysis of the above alternatives was performed using DWI guidelines and workbooks. The detailed capital costs, operation and maintenance costs, replacement costs and present worth tables can be found in **Appendix F**. In the analysis, the initial capacity step increase in each alternative was considered to be the initial capital and O&M costs (i.e. Phase 1). Future capacity step increases were considered to be replacement costs and interim O&M costs and were entered into the workbooks based on timing shown in **Figures 5.1, 5.3, and 5.4**. The annual debt service cost charged by Sanford to the Town of Pittsboro decreases over time in accordance with the debt table provided in **Appendix F**. These debt charges were added as interim O&M costs in the cost workbooks. As the volume pumped to Sanford would increase over time, the per gallon cost (\$1.25/1,000 gallon) were added to the interim O&M costs based on the increase in annual wastewater volume pumped every 2 years. Once 2 million gallons a day of pumping was reached the cost associated with this pumping was used for the remaining time period up until 20 years.

Capital and O&M costs for the decentralized WRFs and future regional WWTPs were based upon cost estimates provided by Chatham Park's engineer. These estimates are provided in **Appendix F** and were used in the cost workbooks. Future regional WWTP construction costs are based on a cost of approximately \$18 per gallon. The discount rate used in the present worth cost calculations are based on the workbook values as provided on the DWI website.

Table 5.1 presents a summary of the alternative costs determined by the DWI methodology. This table includes an estimate of the initial capital cost per gallon and the first year and twentieth year O&M cost to bracket a range. From a comparison standpoint, the difference in present worth costs between two alternatives is considered significant if that difference is 10% or more. For present worth cost differences less than 10% the costs are considered approximately equal. Thus, from a present worth perspective, Alternatives 2 and 4 are approximately equal in cost while Alternative 3 is significantly greater. The costs for Alternatives 2 and 4 are reliant on the Town entering into an agreement with Sanford under the reserve capacity charges and per gallon volume charge as provided by the City of Sanford representatives.

TABLE 5.1 – ALTERNATIVE COST SUMMARY TABLE

Alternative	Initial Capital Cost Estimate ¹	Future Phases Capital Cost Estimate ²	O&M Annual Estimate		Total Present Worth ³	Initial Construction \$/GAL ⁴
			Year 1	Year 20		
Alternative 1: No Action	\$0	\$0	\$0	\$0	\$0	\$0
Alternative 2: Refurbish Existing WWTP, Pump to Sanford, Regional WWTP	\$ 21,585,000	\$ 31,500,000	\$ 1,100,000	\$ 2,990,000	\$ 77,750,000	\$ 7.85
Alternative 3: WWTP Expansion, Regional WWTP	\$ 23,363,000	\$ 58,000,000	\$ 1,330,000	\$ 3,988,000	\$ 98,200,000	\$ 15.58
Alternative 4: Decommission WWTP, Pump to Sanford, Regional WWTP	\$ 17,980,000	\$ 45,000,000	\$ 1,387,000	\$ 3,265,000	\$ 80,000,000	\$ 9.00

Notes: ¹ - Capital Costs are representative of initial construction and would be the proposed SRF loan amount

² - Capital Cost of all future phases

³ - Total Present Worth indicates the current worth of each respective alternative's total project cost in 2015 dollars, including future construction and O&M

⁴ - Value equals Initial Capital Cost divided by capacity provided = 2.75 MGD for Alternative 2, 1.5 MGD for Alternative 3, and 2.0 MGD Alternative 4

5.4 ALTERNATIVES COMPARISON AND PREFERRED ALTERNATIVE

The cost comparison between the alternatives was presented in Section 5.3. In addition to costs, there are non-monetary factors for consideration in selection of an alternative. These non-monetary factors are important because Alternatives 2 and 4 are relatively close in present worth cost.

Some key non-monetary factors are as follows:

- Will the alternative continue to supply reuse water to 3M to fulfill the Town's existing contractual agreement?
- What percentage of NPDES discharge permit capacity (of 3.22 MGD available) will the alternative use?
- What will the treatment requirements be and how difficult will operation be?
- What capacity will be supplied in the first capacity step?
- What are the construction difficulties with the alternative?
- What flexibility does the alternative offer?
- How many separate construction phases are required?
- How much land will be needed?
- What regulatory approvals are required?

Table 5.2 details the non-monetary advantages and disadvantages of each alternative considering the factors above. There are no over-riding non-monetary advantages for Alternative 3 that would outweigh the additional costs. In fact, Alternative 3 has more disadvantages than Alternatives 2 and 4 due to the multiple capacity steps, the greater treatment requirements, and more complicated operation. Thus, alternative 3 is rejected on both a cost basis and a non-monetary factor basis.

Alternatives 2 and 4 each have the common component of installing a new pump station and force main for pumping to Sanford. The primary difference is whether the existing WWTP is utilized and timing for the construction of the future regional plant. In terms of pumping to Sanford, the primary difference between Alternative 2 and Alternative 4 would be the initial amount of wastewater flow pumped to Sanford. In Alternative 2, flow would be split between the existing WWTP and pumping to Sanford whereas in Alternative 4 all flow would be pumped to Sanford immediately. In terms of the forcemain routing, construction challenges, and environmental impact the alternatives would be the same. Due to the long length of the forcemain (14 miles), odor control would be needed for both alternatives. Alternative 2 may have a greater potential for odors because initially the detention time of the wastewater is longer (due to less pumped flow initially). Eventually, both alternatives would utilize the full 2.0 MGD pumping capacity to Sanford. Both alternatives offer the benefit of helping the Sanford WWTP utilize more of its currently idle capacity.

Alternative 2 includes the refurbishing of the existing WWTP and pumping to Sanford. This provides more flexibility for handling peak flows because the existing equalization system is still used and flow can be sent to both the WWTP and to Sanford simultaneously. Under Alternative 2, the Town can continue to provide reuse to 3M

fulfilling its contractual agreement (which is not the case for Alternative 4). Alternative 2 provides up to 2.75 MGD of capacity in the first capacity step which is more than Alternative 4 which has a 2 MGD capacity in the first step. Alternative 2 also pushes the need for construction of a future regional plant back 2 to 4 years versus Alternative 4.

In the first capacity step, Alternative 2 will require operation of two systems (WWTP and pumping station) whereas Alternative 4 would only require operation of a pumping station. However, the existing operating staff is very familiar with operation of the WWTP and the new pump station will be adjacent to the WWTP. Although Alternative 4 will not require operation of the WWTP, it will be necessary to keep renewing the NPDES permit to ensure discharge capacity for future discharges (in future capacity steps). In addition to fully utilize all the capacity at each permitted outfall it is likely that restarting the existing WWTP in the future would be considered in Alternative 4. If the existing Robeson Creek discharge was not utilized at all under Alternative 4, then a permit modification would be necessary to increase the discharge at the Haw River above the existing 1.97 MGD to 2.5 MGD.

The Town recently upgraded the existing WWTP in 2010 to include the equalization pumping and storage system. Debt service is still being paid on this upgrade. If Alternative 4 was chosen, these assets would not necessarily be used and debt serviced would be paid on a non-operating system. In addition, the wastewater flow during storm events could exceed the capacity of the new pump station if I/I efforts being implemented in the Town through a separate effort cannot substantially reduce peak flows. In this is the case, and then it would be necessary to use the existing equalization pumps and tanks under Alternative 4. Although this is possible, Alternative 2 offers more flexibility in handling the peak flows as the WWTP as treatment and pumping to Sanford can happen simultaneously.

Alternatives 2 and 4 will both require wastewater screening and grit removal at the existing WWTP and thus each require approximately equal land requirements for the first capacity step (Phase 1). The difference in land requirements for the future regional plant will be relatively minor. The regulatory requirements and construction permitting will be essentially equal for the two alternatives.

The alternatives were presented to the Pittsboro Town Board of Commissioners in September 2015. Based on a consideration of cost and non-monetary factors the Town selected the first capacity step (i.e. Phase 1) of Alternative 2 for implementation. Thus, the preferred alternative is Alternative 2. **Table 5.3** is a summary of the alternative analysis in a format required by DWI ER/EID guidance. The timing and magnitude of future phases is dependent on the future growth rate of Chatham Park. At this time only the first capacity step (Phase 1) of Alternative 2 would be implemented.

TABLE 5.2 – NON-MONETARY ADVANTAGES/DISADVANTAGES TABLE

Alternative	Advantages	Disadvantages
<p>Alternative 2: Refurbish Existing WWTP, Pump to Sanford, Future Regional WWTP</p>	<ul style="list-style-type: none"> • Continue to serve 3M with reuse water • Excess NPDES discharge capacity available (0.72 MGD) • Less Total N treatment required due to discharge to Sanford • Largest capacity in first phase of all alternatives (2.75 MGD) • Flexibility in handling peak flows • Fewest construction phases • Use current WWTP asset value (last upgraded in 2010) • Room available on-site for pump station 	<ul style="list-style-type: none"> • Subject to Sanford user and debt charges • Potential odor problems with force main to Sanford than Alternative 4 • Four river crossings will impact construction of force main. Rock may be encountered in these crossings. • Will use remainder of all space on the existing WWTP site. • Will require a railroad crossing
<p>Alternative 3: Expand WWTP, Decentralized WRF Plants, Future Regional WWTP</p>	<ul style="list-style-type: none"> • Continue to serve 3M with reuse water • Pittsboro directly in control of costs and charges and operations. • Use current WWTP asset value (last upgraded in 2010) • Chatham Park can build decentralized plant and provide reuse/non-discharge earlier in time. • Could utilize existing spray irrigation land 	<ul style="list-style-type: none"> • Lower initial capacity (1.75 MGD). • Uses all NPDES discharge capacity and must have additional reuse/non-discharge (0.78 MGD) capacity in later phases. • Lower Total N limits (more treatment required) • More complicated operation due to more plants and higher treatment required at each plant • More difficult construction on small site for WWTP expansion. • Numerous construction phases • Requires more land purchase • More regulatory approvals (more steps)
<p>Alternative 4: Decommission WWTP, Pump to Sanford, Future Regional WWTP</p>	<ul style="list-style-type: none"> • Excess NPDES discharge capacity available (0.72 MGD). However, may need permit modification if only discharging to Haw River. • Less Total N treatment required due to discharge to Sanford • Room available on-site for pump station. • Avoid need to refurbish plant. • Stop treating wastewater for ~ 7 years 	<ul style="list-style-type: none"> • Need alternate method to supply water to 3M or cancel contract • Subject to Sanford user and debt charges • Potential odor problems with force main to Sanford • Two river crossings (rock likely) will impact construction of force main • Will require a railroad crossing • Must keep renewing NPDES permit initially (despite no discharge) to allow for future discharge • Lose current WWTP asset value and potentially lose experienced operators

Table 5.3 – Alternative Analysis Summary

		No-Action	Alternative No. 2 (Preferred Alternative)	Alternative No. 3	Alternative No. 4
Capital Cost		\$ 0	\$ 21,585,000	\$ 23,362,595	\$ 17,981,210
Present Worth		\$ 0	\$ 77,746,521	\$ 98,177,383	\$ 79,995,876
Impact Analysis	Feasibility	<input type="checkbox"/> Feasible <input checked="" type="checkbox"/> Infeasible	<input checked="" type="checkbox"/> Feasible <input type="checkbox"/> Infeasible	<input checked="" type="checkbox"/> Feasible <input type="checkbox"/> Infeasible	<input checked="" type="checkbox"/> Feasible <input type="checkbox"/> Infeasible
	Capital Costs	<input type="checkbox"/> Less than Preferred <input type="checkbox"/> Greater than Preferred <input type="checkbox"/> Same as Preferred	<input type="checkbox"/> Less than Preferred <input type="checkbox"/> Greater than Preferred <input checked="" type="checkbox"/> Same as Preferred	<input type="checkbox"/> Less than Preferred <input checked="" type="checkbox"/> Greater than Preferred <input type="checkbox"/> Same as Preferred	<input type="checkbox"/> Less than Preferred <input type="checkbox"/> Greater than Preferred <input checked="" type="checkbox"/> Same as Preferred
	Present Worth	<input type="checkbox"/> Less than Preferred <input type="checkbox"/> Greater than Preferred <input type="checkbox"/> Same as Preferred	<input type="checkbox"/> Less than Preferred <input type="checkbox"/> Greater than Preferred <input checked="" type="checkbox"/> Same as Preferred	<input type="checkbox"/> Less than Preferred <input checked="" type="checkbox"/> Greater than Preferred <input type="checkbox"/> Same as Preferred	<input type="checkbox"/> Less than Preferred <input type="checkbox"/> Greater than Preferred <input checked="" type="checkbox"/> Same as Preferred
	Environmental	<input type="checkbox"/> Less than Preferred <input type="checkbox"/> Greater than Preferred <input type="checkbox"/> Same as Preferred	<input type="checkbox"/> Less than Preferred <input type="checkbox"/> Greater than Preferred <input checked="" type="checkbox"/> Same as Preferred	<input type="checkbox"/> Less than Preferred <input checked="" type="checkbox"/> Greater than Preferred <input type="checkbox"/> Same as Preferred	<input type="checkbox"/> Less than Preferred <input type="checkbox"/> Greater than Preferred <input checked="" type="checkbox"/> Same as Preferred
Rationale for Rejection/Acceptance:		The No Action alternative is not feasible because it would not address current peak flow by-passes, equipment replacement, and would not accommodate projected future wastewater flows. This alternative is rejected.	This alternative has approximately equal cost to Alternative 4 but provides greater non-monetary benefits than Alternative 4. These include being able to provide continued reuse water to 3M, flexibility to handle peak flows, replacement of aged equipment, continued use of existing WWTP assets, and the largest Phase 1 capacity. Thus, this is the preferred alternative	The primary advantage of this alternative would be that the Town of Pittsboro would not be dependent on another municipality for wastewater service (and thus not on their charge rates). However, the higher cost and the lack of other significant non-monetary benefits for this alternative results in rejection of this alternative.	Alternative 4 has the common component with Alternative 2 in pumping wastewater to Sanford. However, this alternative creates problems in providing reuse water to 3M, does not accommodate peak flows as well, and requires earlier construction of a future regional WWTP. This alternative also does not utilize existing WWTP treatment capacity. Thus, this alternative is rejected.



6.0 PROPOSED PROJECT DESCRIPTION

Previous sections of this report described the existing conditions, the future population and wastewater projections, the alternatives considered, and the selection of the preferred alternative. The evaluation is based on a 20-year time horizon (to Year 2035). Alternative 2 is the preferred alternative and its selection is based on a consideration of the 20-year time frame. However, the rate at which projected wastewater flows will be reached is dependent the pace of construction of the Chatham Park development. As there is some uncertainty in the pace of the growth, the proposed project will be for implementation of the first capacity step of Alternative 2, termed Phase 1, for a total capacity of 2.75 MGD. A future phase or phases would be needed to provide service for the estimated 4.5 MGD of projected wastewater flow in the next 20 years. The estimated Phase 1 capital cost is \$21,585,000. The total present worth analysis was presented previously in Section 5.3.

The proposed project was introduced in Section 5. The project will consist of refurbishing of the existing WWTP (staying at the existing capacity of 0.75 MGD) and constructing a new pump station and associated force main for pumping up to 2.0 MGD of wastewater to the City of Sanford Big Buffalo Wastewater Treatment Facility. The City of Sanford has indicated willingness to accept this wastewater and the Town of Pittsboro and City of Sanford and the Sanford City Council has passed a resolution authorizing the development of an agreement.

The project will be located in Chatham and Lee Counties (**Figure 1.1**). The existing WWTF to be refurbished is located in the Town of Pittsboro (**Figure 1.2**). **Figure 5.2** shows the proposed preliminary forcemain route for pumping to Sanford from the existing WWTP site property. Screening, grit removal and the new pump station would be located on the existing WWTP site, north of the existing package plants and east of the existing influent screen. A preliminary layout for the pump station and the new forcemain in the vicinity of the WWTP is shown in **Figure 6.1**.

It is estimated that less than 1 acre will be disturbed at the WWTP site. Part of that disturbance may be in the 500-year and 100-year floodplains. Some grading will be required and additions of paved driveways near the new pump station and screen/grit units. The forcemain construction would temporarily disturb an estimated 34 acres (75,000 lineal feet with 20 foot wide temporary impact). Wetland and stream impacts would be minimized to the extent possible by using directional drilling techniques. Section 7 of this report provides the Environmental Information Document (EID) for the proposed project.



LEGEND
[Solid Line] WWTTP PROPERTY LINE
[Dashed Line] WWTTP PROPERTY SETBACK



Figure 6.1
New Pump Station
Plan Aerial
Pittsboro ER / EID



The major items to be included in this Phase 1 project are listed below:

Existing WWTP improvements

- **Flow measurement and recording and SCADA System.** The existing influent flow meter and circular flow chart system does not have the capability to record peak influent flows to the WTP. Controls at the existing WWTP are dedicated control panels located adjacent to the processes they control. The various controls panels are not linked to a central SCADA system. The project would include updating the influent flow measurement and adding a centralized computer than can control from a central screen installed in the existing Administration Building control room.
- **Improvements to Package Plants.** The project would include coating the interior walls of the package plants, painting/repair to the outside walls, clarifier metal sand-blasted and painted. Also includes upgrades to the existing clarifiers (new drives, scum troughs, bottom scraper) and new aeration diffuser and piping system. Replacement of the existing diffusers in the scum digester boxes is also included.
- **Nitrogen Treatment.** Add required operational changes/mixing equipment/tanks to meet a future nitrogen limit of 15 mg/L to be effective after 2022. This level of treatment has been achieved on a trial basis in the past using aerobic/anoxic cycling in the existing aeration tanks.
- **Aeration Blowers.** Replace four blowers including outdoor weather resistant sound enclosures, variable frequency drives for speed control, and piping changes to dedicate two blowers to each package plant (with interconnecting piping).
- **RAS return pumps (100 to 300 gpm).** Add two new pumps to be installed in the existing RAS fiberglass shed structure.
- **Tertiary filters.** Filter upgrades including replacement of sand and air lift equipment in all three filters, the two 7.5 HP air compressors, the control gates, and the above and below grade air lines. Inspect and potentially coat the interior concrete walls in the filters.
- **Ultraviolet (UV) Disinfection.** Design a second UV unit/channel adjacent to the existing unit in the spot of the older abandoned UV unit at the site.
- **Waste activated sludge pump.** Replace existing two pumps with new pumps including variable frequency drives for speed control.
- **Sludge Processing and Disposal.** Modify existing thickening process to produce sludge cake (15% solids) and transport/conveying of the dewatered sludge to a storage area. The storage area would be a concrete pad area with an open wall roof and room for metal sludge containers. Dewatered sludge to be hauled off-site by a licensed disposal contractor.
- **Break room and bathrooms structure.** The project includes a new structure to serve as a breakroom for the WWTP staff. The structure/building would also include a men's and women's bathroom for staff and for visitors. This structure could be part of the new pump station.

- **Bulk reuse water station.** This bulk station would be a package type bulk station with a capacity of approximately 300 gpm in order to fill a 5,000 gallon truck in 15 to 20 minutes. This station would be located approximately 1 mile from the WWTP near the intersection of Sanford and Moncure-Pittsboro Road.

Pump Station and Force Main to Sanford

- **New Pump Station.** A new pump station with a rated capacity of 1740 gpm would be installed at the existing WWTP site. The new pumps would have variable frequency drives for speed adjustment and preliminary sizing indicates 100 to 125 HP pumps would be needed. The existing influent pump station and equalization pump station will be integrated with the new pump station to Sanford.
- **Screening and Grit Removal.** Screening and grit removal units will be installed at the WWTP site prior to the new pump station. The capacity of these units would be approximately 4 MGD peak flow.
- **New Forcemain.** The new forcemain would be approximately 14 miles long and be a 16-inch diameter size pipe. The forcemain would discharge to the equalization tank at the Sanford Big Buffalo WWTP. Preliminary evaluation indicates the following:
 - The forcemain would be routed primarily along US 15-501 and the Little Buffalo PS force main to the Sanford WWTP for a total length of approximately 14 miles. Of that length, a portion of US 15-501 from SR 2219 to the county line is considered controlled access (~ 33,800 feet) and the forcemain may need to be located outside of the right-of-way dependent on NCDOT requirements.
 - The preliminary high point for the line is approximately 150 feet above the existing WWTP site.
 - There will be four stream crossings (see **Figure 5.2**) which will require directional drilling. Rock may be encountered at some of these crossings.
 - It is estimated there will be five bore and jack sections under secondary road sections.
 - One railroad crossing is located on the proposed route.
 - Air release manholes may be needed every 1500 feet

The proposed project will provide benefits not normally captured in the DWI priority scoring system. One benefit is that additional effluent flows to Robeson Creek and the Haw River will be pumped to the City of Sanford's Big Buffalo Creek WWTP instead of adding to the nutrient load of Jordan Lake. A second benefit of pumping to Sanford is that the Big Buffalo Creek WWTP is currently under loaded and not utilized to the full extent that it could be. Pumping Pittsboro's wastewater to the Big Buffalo Creek WWTP will allow Sanford's plant to operate more efficiently and closer to its design capacity. Lastly, Big Buffalo Creek WWTP was funded through a Clean Water Funding loan package and thus the money already spent with State funds will be better utilized.

7.0 ENVIRONMENTAL INFORMATION DOCUMENT

An Environmental Information Document has been prepared for the proposed alternative of this project and can be found in **Appendix G** along with supporting figures and information. The most significant impacts due to construction are mainly limited to the improvements at the WWTP project site. These impacts are related to the earthwork and excavation required for the construction of the new pump station. Temporary disturbances to wildlife and vegetation along the forcemain route are potential impacts related to the forcemain construction; however, all possible efforts will be utilized to mitigate these disturbances. Increased noise levels during construction are expected, but all construction will be conducted during normal day-time hours and will be temporary. There are no anticipated impacts related to both water and land resources as a result of the project's construction, all sedimentation and erosion control practices will be followed. All construction at the WWTP and along the forcemain route is expected to be conducted in previously disturbed soil within the WWTP property or in existing utility easements and rights-of-way. There are no significant potential direct impacts or secondary and cumulative impacts expected as a result of the proposed project.

8.0 FINANCIAL ANALYSIS

The financial analysis for the proposed project has been performed in accordance with a minor project under DWI guidance requirements. The guidance requires preparation of various financial tables in a financial analysis workbook. These tables have been prepared for this project and are provided in **Appendix H**. **Appendix H** also contains the current Town water and wastewater user rates and a copy of the LGC-108C form submitted with the CWSRF loan application. The local government unit (LGU) for this project is the Town of Pittsboro.

Based on the current user rates and the workbook analysis, the average monthly bill for 5,000 gallons of water and sewer is \$96.26. This is currently 2.31% of the median household income (1.34% for sewer and 0.97% for water).

The source of funding for this project would be a CWSRF loan. The Letter of Intent to Fund (LOIF) issued by DWI for this project is included in **Appendix H** and indicates a loan interest rate of 1.84% for a 20year loan. Based upon these rates and the loan amount of \$21,585,000, the estimated annual debt service would be \$1,476,000 after the project.

The user fee financial analysis tables for this project was modified to take into account the projected growth in the Town and in Chatham Park. The standard tables do not take into account sewer access fees, capital recovery fees, or user fees based on growth projections. These fees would raise additional revenue (above the current revenue) for the Town. These items were introduced in the LGC-108C form as submitted with the CWSRR application (see **Appendix H**). **Appendix H** contains two phone record memos detailing how the future number of household and commercial units in Chatham Park were estimated by Chatham Park and how Pittsboro access and capital recovery fees were determined based on these estimates. The projected new customers to be added by Chatham Park each year are 375 residential and 75 commercial customers per year. This information was input into the standard DWI workbook tables. The results of adding these projected revenue sources (primarily from the Chatham Park development) to the tables indicates that existing user rates would not need to be increased to fund the project.

Evaluation of user rates under the standard methodology (i.e. not accounting for future users and their user fees, access fees, or capital recovery fees) would result in a sewer user rate of \$209/month if only existing users pay for the project (user rate increase of 275%). It is recognized by the Town and by Chatham Park that the existing users cannot finance this project and that Chatham Park will need to come to a development agreement with the Town to fund this project.

A user rate evaluation was performed based on projected users added by the end of construction. Additional revenues would include increased revenue for volume charges, sewer access and capital recovery fees. This analysis resulted in little to no user fee increases. It is uncertain at this point exactly what the total customer base increase per year will be from the Chatham Park development. The final user rate impact will need to be further developed as the Town and the Chatham Park work through a developer agreement.

The Town is working with the City of Sanford to prepare an interlocal services agreement for Sanford to accept up to 2.0 MGD of the Town's wastewater. An unsigned draft of this agreement will be provided to DWI as soon as it is available and in a timely manner to meet the Letter of Intent schedule for completion of the ER/EID approval.

9.0 PUBLIC PARTICIPATION

This project falls under the minor construction criteria. A Determination of Minor Construction Activity (DMCA) is included in **Appendix I**.

The Town of Pittsboro has made their residents aware of the proposed improvements to the Town's WWTP and collection system during public forums at the Town Board of Commissioners meetings. The discussions of the Town's impending capacity issues and potential alternatives were publically presented during a normally schedule meeting on June 22, 2015. During this meeting, the 20-year wastewater flow projections were presented to both the public and the Board Commissioners. These projections detailed the different user components which totaled the flow as a result of the projected population growth, and illustrated how these projections presented a capacity issue at both the WWTP, as well as the permitted discharge volume at the outfall (Robeson Creek) at the existing WWTP. The presentation also detailed three alternatives, including treatment technologies, to satisfy the treatment and discharge needs. Each alternative was detailed and preliminary capital costs were presented. Leading up to the Board of Commissioners meeting, several staff meetings between the Town and The Wooten Company were held to discuss preliminary population and flow projections, methodology for determining these projections, alternative considerations, the impact of the Chatham Park development on both the system's capacity needs and permitting restrictions, and funding. In conjunction with these progress meetings, conference calls were held periodically to maintain ongoing communication about the project's development.

As made apparent throughout this report, this project is unique due to the large potential impact that the Chatham Park development will have on the Town's wastewater system. Concurrent with the previously discussed meetings, the Town and Chatham Park have met to discuss how they will approach future sewer service. Chatham Park representatives provided projected development within the park and timing for such development, this information was essential in projecting the future flows and determining the steps for the projected wastewater system improvements as presented in this report. The Town Manager of Pittsboro has also is currently having meetings with Chatham Park officials approximately every three weeks.

Along with the ongoing meetings with Chatham Park, the Town and The Wooten Company representatives have met with the Town of Sanford to discuss the capacity issues Pittsboro is faced with. These meetings were held to evaluate the option of pumping the projected future wastewater flows to the Sanford Big Buffalo Wastewater Treatment Facility. These meetings included the proposed forcemain routing and potential tie-in locations, treatment costs and reserve capacity fees, and Sanford's capacity availability.

On September 17, 2015, The Wooten Company held a commissioners workshop with the Board of Commissioners. The purpose of this workshop was to present the progress of the proposed project's development and present the preferred alternative in order for the commissioners to make a knowledgeable vote for pursuing project funding. Among the recommendation of the preferred alternative, all evaluated treatment alternatives and flow projections with and without the impact of Chatham Park's flow were presented. Each alternative was presented with both costs

and non-monetary considerations. Based on the information presented, the Board decision was to move forward with providing wastewater service to both the Town and Chatham Park as a joint effort under Alternative 2 as presented in this ER/EID.

The Town called a vote during the normally scheduled Board of Commissioners meeting on September 28th to adopt the resolution and approve the recommended alternative (Alternative 2) for submittal to the CWSRF funding program. The vote was passed 4 to 1. Subsequently, a CWSRF loan application was submitted for the project to the Division of Water Infrastructure (DWI). The DWI issued a letter of intent to fund the project to the Town on February 1, 2016. The total loan amount in the letter of intent was \$21,585,500.