FISCAL NOTE FOR PROPOSED PERMANENT RULE 15A NCAC 18A .1971

ENGINEERED OPTION PERMIT

Rule Amendments:	15A NCAC 18A .1971
Name of Commission:	Commission for Public Health
Agency Contact:	Nancy E. Deal, On-Site Water Protection Branch Environmental Health Section, DPH/DHHS 1642 Mail Service Center Raleigh, NC 27699-1642 919-707-5875 nancy.deal@dhhs.nc.gov
Impact Summary:	State Government: Yes Local Government: Yes Private Impact: Yes Substantial Impact: Yes
Authority:	G.S. 130A-336.1
Necessity:	Permitting backlogs at local health departments for on-site wastewater treatment systems have increased the time it takes for a homeowner to receive a building permit and start construction. The Engineered Option Permit allows North Carolina licensed Professional Engineers to issue permits for on-site wastewater systems and decrease the time it takes for a homeowner to receive their building permit.

I. SUMMARY

The proposed permanent rule allows a North Carolina licensed Professional Engineer to write a permit for an onsite wastewater system. The temporary rule went into effect July 1, 2017.

II. INTRODUCTION AND BACKGROUND

The On-Site Water Protection Branch (OSWP) of the Environmental Health Section, DPH/DHHS, oversees the sewage treatment and disposal rules for on-site wastewater treatment systems. The OSWP staff authorizes registered environmental health specialists (REHS) at the local health departments (LHD) to issue permits for on-site wastewater treatment systems.

LHDs have a three tier permitting process: improvement permit, construction authorization, and operation permit. The improvement permit is issued after it has been determined that a site meets the minimum requirements for a specific trench type. This involves a soil and site evaluation and a demonstration that the proposed system, including tanks, drainfields, and other components, will fit in the area available. The second tier is the construction authorization. The construction authorization provides the details for the on-site wastewater treatment system design. The third tier is the operation permit. This is issued after the on-site wastewater treatment system has been installed and the system installation has been inspected by the LHD. Improvement permits with a plat do not expire. Improvement permits without a plat, just a

site plan, are valid for five years. A construction authorization is valid for as long as the improvement permit is valid.

A homeowner applies to the environmental health section of the LHD for an on-site wastewater treatment system. The REHS goes out to the site, performs a soil and site evaluation, and either approves or denies the application. If the site is approved, the REHS issues an improvement permit and a construction authorization. Once the construction authorization has been issued, the building permit can be issued in accordance with G.S. 130A-338.

Effective July 1, 2016, the Engineer Option Permit (EOP), Temporary Rule 15A NCAC 18A .1971 and G.S. 130A-336.1, allows a North Carolina licensed Professional Engineer (PE) to permit an on-site wastewater treatment system without going through the LHD. Prior to this date, the only option homeowners had for permitting of on-site wastewater treatment systems was through the LHD. The PE and other licensed professionals involved in the evaluation, design, installation, and operation of the on-site wastewater treatment system accept all liability for the system under the EOP. A permit issued under the EOP by a PE must still meet all the sewage treatment and disposal rules, the permit does not have to be issued by the LHD. EOPs are required by G.S. 130A-336.1 to include a plat in their submittal. To parallel with LHD permits, an EOP permit does not expire.

Session Law 2015-286, approved October 22, 2015, adopted G.S. 130A-336.1 which allows a PE to permit an on-site wastewater treatment system. Session Law 2015-286 required a temporary rule to be in effect by June 1, 2016, and permanent rules to be in effect by January 1, 2017.

III. PURPOSE OF RULE CHANGE

The EOP provides homeowners with an alternative permitting process which can help expedite the process when LHDs have permitting backlogs. This private alternative permitting process also allows the homeowner to feel more in control of the process. The homeowner can pick up the phone, call their consultants, and for an increased cost, have their consultants start work on their lots as soon as possible. LHDs review new applications in the order in which they are received, except for repairs and complaints. Repairs and complaints are moved ahead of new applications due to potential threats to public health and the environment.

There is no standard turnaround time for permitting. The amount of time required to review the application, visit the site, conduct a soil and site evaluation, and design the system will vary greatly. For systems that require a Licensed Soil Scientist (LSS) and PE, the permitting process will also include design review. A number of health departments can issue a permit within two to three weeks, on average, of receiving a complete application, depending on system complexity. G.S. 130A-336.1(c) requires that LHDs determine the completeness of a Notice of Intent to Construct (NOI) for EOP systems within 15 business days. Once the NOI is determined to be complete or the LHD issues the improvement permit and construction authorization, the homeowner can receive their building permit. So, the time from application to building permit is roughly the same for EOP systems and permits issued by LHDs.

Permitting backlogs impact developers and homeowners. A building permit cannot be issued until a lot has a permit for an onsite wastewater treatment system. The homeowner cannot begin building until they have received their construction authorization. In the current environment where banks are still being careful lending money, a 10 week permit lag time could cost a homeowner their mortgage or a developer their time-limited bank financing.

There are a number of reasons that can result in the permitting backlog: limited supply of suitable lots for conventional systems; the need for more extensive soil and site evaluations and increased record keeping due to increased use of marginal lots; and understaffing at LHDs.

During the building boom of the early 2000's, LHDs were issuing upwards of 40,000 new permits every year for on-site wastewater treatment systems. As development increased during this time, LHDs hired additional REHS to help with the permitting workload. The increase in permits kept pace with the increased development until the economic recession started in 2008. The number of new permits issued decreased by approximately 50% after 2008. As the workload decreased, REHS were moved to other sections in environmental health (food and lodging, swimming pools, etc.) or let go. The number of new permits issued per year has leveled off as the economy has stabilized, however, not all LHDs have been able to hire REHS that left when the recession hit.

It was during this building boom peak that a number of the lots with good soil were permitted and developed. These lots utilized conventional on-site wastewater treatment systems. A conventional system consists of a septic tank and a drainfield. The septic tank effluent can either be pumped to the drainfield or flow by gravity. The rules allow for modified conventional, alternative, or innovative and experimental on-site wastewater treatment systems to be installed, but these cost more than the conventional system and not all homeowners want anything other than a conventional on-site wastewater treatment system.

The lots that are left cannot always be permitted with a conventional on-site wastewater treatment system. The lots may have marginal soils, limited area available, limited soil depth, or other soil or site restrictions that require the use of an alternative on-site wastewater treatment system. Permitting of these lots can take additional time for the REHS to document the soil and site conditions and determine which alternative systems can be installed on the lot.

Increased use of marginal lots requires more extensive soil and site evaluations and an increase in documentation. The documentation associated with issuing an improvement permit and construction authorization for on-site wastewater treatment systems includes the following:

- Performing soil borings and filling out paperwork describing the soil evaluation in accordance with Rules 15A NCAC 18A .1939 through .1948;
- Drawing a diagram to scale, locating all soil borings, proposed house location and driveway, well, lot features (drainage ways, easements, right of ways, etc.), property lines, and system location including triangulating dimensions and distances as necessary for accuracy and repeatability; and
- Providing a sufficient level of detail to both facilitate the system installation and serve as a permanent record of the system design and location.

IV. ANALYSIS

The EOP will have an encomic impact on State Government, Local Government, and the Private Sector.

Information was collected from LHDs, OSWP staff, PEs, LSSs, and installers. LHDs were divided into three groups: small, mid-size, and large by the size of their on-site wastewater treatment permitting staff. Small LHDs have one or two staff that permits on-site wastewater treatment systems. Mid-size LHDs have three to four staff, and large LHDs have five or more staff that permits on-site wastewater treatment systems.

LHD and EOP Permitting Projections by Wastewater System Type

EOP permitting is more expensive than LHD permitting, and when the turnaround time is comparable under zero-backlog conditions, applicants are likely to pay for EOP only when an LHD is facing a

backlog. However, the EOP also provides homeowners with the feeling of more control over the timing of the permitting process.

The analysis below indicates that the number of permits issued per year will increase between 2017 and 2021. The Branch anticipates that the permitting increases will be shared by both the LHD and the EOP. Permits are expected to grow slowly over the next five years (see Table 1 below). The Branch expects that LHD permitting capacity will increase as vacant positions are filled, but that few to no new positions will be created within the next five years. The number of EOP permits are likely to rise steadily and then reach a maximum within the next five years as the private sector learns about the EOP option. The Branch does not expect the number of PEs in this sector to increase during this period.

1. Wastewater Treatment System Permit Projections

Table 1 shows the approximate number of new construction authorization permits issued per year by the LHDs from 2002 to 2014.[1] The OSWP collects information from LHDs regarding the number and type of on-site wastewater treatment systems permitted. Not all LHDs respond and provide information to the OSWP. The approximate number of permits issued each year was calculated in the following manner: the number of new construction authorization permits issued and the number of LHDs responding were determined from the OSWP County On-Site Activity Reports. Each year was evaluated for the LHDs that did not respond. To provide an estimate of the number of permits issued for the missing values, the median was calculated based on the information for that LHD in the rest of County On-Site Activity Reports. The yearly total was calculated including the median number of permits for the missing LHD records. The OSWP has information up through 2014. Information for 2015 and 2016 on the number of permits issued has not yet been compiled.

[1] NC On-Site Water Protection Branch (2002-2014). "County Monthly Activity Reports." Accessed at http://ehs.ncpublichealth.com/oswp/resources.htm.

Table 1. Approximate Number of On-site Wastewater Treatment System New Construction Authorization Permits Issued

Year	Approximate Number of New Construction Authorization Permits Issued	Change in Number of Construction Authorization Permits Issued
Historical Data		
2002	43,529	
2003	39,200	-10%
2004	39,901	2%
2005	*	*
2006	39,653	**
2007	33,590	-15%
2008	23,090	-31%
2009	15,897	-31%
2010	14,293	-10%
2011	12,726	-11%
2012	14,018	10%
2013	15,140	8%
2014	14,752	-3%
Estimates		
2015	17,139	16%
2016	17,989	5%
Projections		
2017	18,193	1%
2018	18,801	3%
2019	19,903	6%
2020	20,679	4%
2021	21,152	2%

*Data collected were a statistical anomaly and not included in this analysis.
**Percent change could not be calculated.

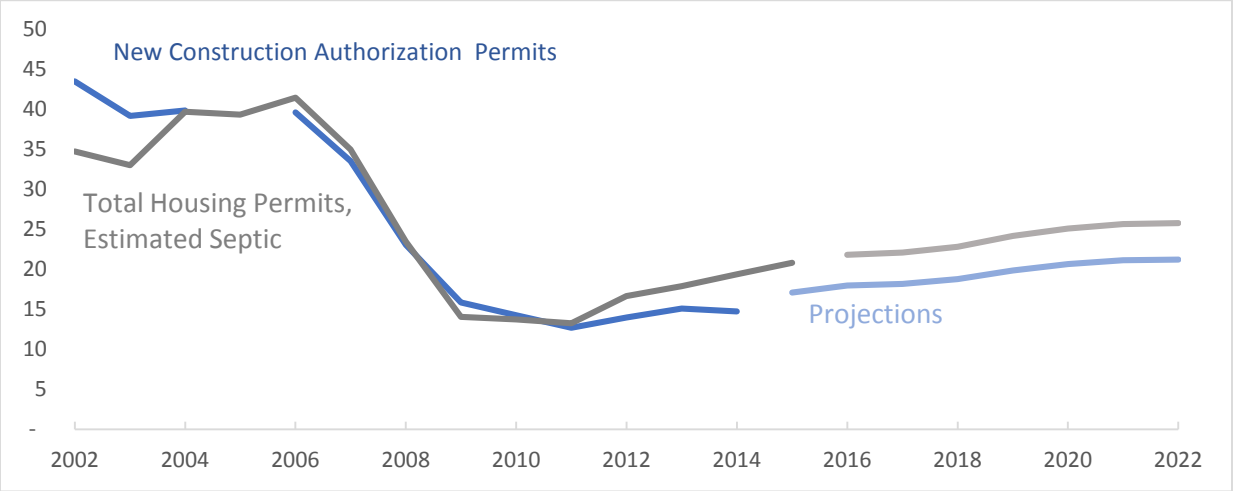
The number of permits issued began to level off in 2013 and 2014. The worst effects of the recession appear to be over as the percent change in permits issued is in single digits as compared to double digits in the previous years. Based on the Branch's estimates, 2015 showed a significant increase in the number of permits issued, and then levels off from 2016 through 2021. However, the number of permits issued depends on the current status of the housing market and the economy, so it can vary from year to year.

The projected number of permit issued from 2017 to 2021 was based on statewide building permit projections,[2] weighted by county population growth projections.[3] The total number of projected building

[2] IHS Connect (September 2016). *State Analysis: Forecast Data: Annual Data – North Carolina.* Accessed at https://www.ihs.com/index.html.
[3] NC Office of State Budget and Management (2016). *Annual County Population Totals 2017-2021*. Accessed at http://www.osbm.nc.gov/demog/county-projections.

permits was multiplied by the percent of households in each county on septic systems[4] to estimate the number of new on-site wastewater treatment systems permits for 2017 through 2021. Figure 1 shows the relationship between the number of new construction authorization permits issued and the total number of housing permits with on-site wastewater treatment systems.

Figure 1. New Construction Authorization Permit Projections in the Thousands by Year



2. Private Engineer Capacity Assumptions

Wastewater treatment systems can be divided into two major categories: large, municipal systems and on-site wastewater treatment systems. Approximately 75% of the United States is served by large municipal wastewater treatment systems, based on 1990 Census data for sewage disposal. Most engineering firms, based on this information, are going to have experience with large municipal wastewater treatment systems. Large municipal wastewater treatment plant design is taught as part of civil engineering curriculums at college. These municipal systems generally have a common design.

The number of PEs with experience in on-site wastewater treatment systems is small, approximately 40 to 50 individuals and firms.[5] The Division does not expect more PE's to enter the on-site wastewater sector in the next five years due to this rulemaking. Unlike large municipal systems, on-site wastewater treatment system designs vary significantly based on system size and site variability.

PEs with experience designing large municipal wastewater treatment systems cannot necessarily design on-site wastewater treatment systems. On-site wastewater treatment systems are a small specialized subset of wastewater treatment systems. Many of the design principles that large systems are based on are different for on-site wastewater treatment systems. For example, the wastewater strength and quantity that on-site wastewater treatment systems will receive is very different from a municipal wastewater treatment plant. On-site wastewater treatment systems receive smaller, more concentrated doses of wastewater.

---

[4] U.S. Census Bureau (1990). *1990 Census of Population and Housing – Sewage Disposal*. Accessed at https://www.census.gov/mp/www/cat/decennial_census_1990/1990_census_of_population_and_housing_summary_tape_file_3a.html

[5] This information was calculated from OSWP Project Review Spreadsheet. The number of PEs that have submitted projects to OSWP over the past five years was counted and increased by 25% to account for PEs that may not have submitted projects within the past five years.

Additionally, on-site wastewater treatment systems require more site specific design work than a large municipal wastewater treatment plant. However, the cost of the municipal treatment plant will be significantly greater than the cost of the on-site wastewater treatment system. Most engineering firms will generate more revenue with large municipal wastewater treatment plants than with on-site wastewater treatment systems.

Some PEs that are not currently designing on-site wastewater treatment systems may choose to begin designing systems under the EOP, but the return on investment is generally not great enough to see a significant increase in the number of PEs designing on-site wastewater treatment systems.

The Branch anticipates that the number of permits issued under the EOP will level off after five years. The PEs already designing on-site wastewater treatment systems will reach a maximum on the number of additional system designs that they can finish in a reasonable time frame. Also, most PEs who survived the recession did so because they were working in a number of fields, not just on-site wastewater. As companies start to see an uptick in business, they are not going to immediately start expanding. No one is exactly sure how the economy is going to proceed, so companies are going to be cautious. There will also be a saturation point with the added risk and liability the PEs will incur under the EOP.

3. LHD Capacity Assumptions

The Branch has seen the number of interns coming through Centralized Intern Training for on-site wastewater slowly increase over the past few years. Most interns are filling vacant positions, created from people retiring or moving to other jobs. The Branch does not anticipate many new positions to be created in the next five years, due to the implementation of EOP.

4. Anticipated Permitting by Type of System

The temporary EOP rule became effective July 1, 2016. From July 1, 2016, to September 30, 2016, 29 Notices of Intent (NOI) to permit an on-site wastewater treatment system under the EOP have been received by LHDs. These NOIs have been received by six LHDs. North Carolina has 100 LHDs that issue permits for on-site wastewater treatment systems. Based on the estimated number of permits issued in 2016 and the number of NOIs received, 182 permits or 1% of the average number of new construction authorization permits issued, will be submitted under the EOP during the first year.

The majority of systems permitted under the EOP will be smaller systems with a design flow under 3,000 gallons/day. This is based on the NOIs submitted to the LHDs so far and conversations with PEs in the field. This is also supported by the number of new construction authorizations submitted and the number of new housing permits per year. The majority of on-site wastewater treatment system permits issued each year are for single family homes. A small number of systems with a design flow over 3,000 gallons/day will be permitted under the EOP, probably no more than two to three a year. These larger systems incur significantly greater liability for the licensed professionals involved and also require significantly more work. With the limited number of PE firms and individuals with experience in on-site wastewater treatment systems, they will only be able to handle a limited number of EOP systems. These PE firms and individuals will still be submitting plans to the LHDs and OSWP for review and approval, as they will have clients who prefer the traditional permitting process due to the reduced cost associated with it. Table 2 shows the projected number of new construction authorization permits issued from 2017 to 2021, including the projected number of EOP permits issued. Table 2 projects a 0.5 percent increase per year in EOP permits based on the number of EOP permits submitted in the first quarter and conversations with PEs in the field.

Table 2. Projected Number of Permits Issued by LHD and EOP

Year	Total Number of Permits Issued*	Total Number of Permits Issued by LHD	Total Number of Permits Issued under EOP	Percent of EOP Permits Issued
2017	18,193	18,011	182	1%
2018	18,801	18,519	282	1.5%
2019	19,903	19,505	398	2%
2020	20,679	20,162	517	2.5%
2021	21,152	20,517	635	3%

*For a description of how these figures were estimated, see Table 1.

Based on OSWP County On-Site Activity Reports, approximately .5 percent of all permits issued utilizes advanced pretreatment or drip irrigation. Advanced pretreatment and drip irrigation are more likely to be used on sites with limitations that prohibit the installation of a conventional on-site wastewater treatment system.

Local Government Impact

For smaller on-site wastewater treatment systems, with a design flow of 3,000 gallons/day or less, the average LHD man-hours involved in issuing a permit, from receipt of a complete application to operation permit issuance, ranges from four hours to 10 hours depending on the size and complexity of the system based on information from LHDs. Smaller systems such as single family homes that utilize a conventional wastewater system will generally only take around four man-hours. As the system increases in size or complexity, such as advanced pretreatment and drip irrigation drainfield distribution, the LHD man-hours involved in the permitting will increase.

Systems with a design flow over 3,000 gallons/day require the following:

- soil and site evaluation conducted by a LSS in accordance with 15A NCAC 18A .1938(i)(9);
- on-site wastewater treatment system designed by a PE in accordance with 15A NCAC 18A .1938(d)(1); and
- OSWP review and approval in accordance with 15A NCAC 18A .1938(e).

These larger systems range in size from 3,100 gallons/day to over 100,000 gallons/day. The number of LHD man-hours involved with the larger systems will vary based on the size and complexity of the system, just as with the smaller systems. For a large system with a design flow closer to the lower end of the range and a conventional on-site wastewater treatment system, the LHD man-hours would range between 15 to 30 hours based on information from LHDs. A large system with a design flow over 50,000 gallons/day and advanced pretreatment with drip irrigation drainfield distribution, the LHD man-hours would range from 75 to 100 based on information from LHDs.

The economic impact on LHDs for the EOP would have two different parts: fees and man-hours based on the permits issued under the EOP. The LHD is going to lose application fees from projects that are permitted under EOP, but can charge up to 30% of the fees established for an improvement permit, construction authorization, and operation permit. The LHD will gain some man hours from the projects that are permitted under the EOP, but will also have to spend about four hours on average for every EOP submittal. The LHD must review the NOI for completeness, attend the post-construction conference, and review the authorization to operate for completeness. They will also have to coordinate with building inspections for the release of the building permit and the certificate of occupancy.

The NOI, post-construction conference, and authorization to operate are similar to the LHD three tier permitting process. The NOI is similar to the improvement permit; the post-construction conference is similar to the on-site wastewater treatment system installation inspection that is conducted by the LHD prior to the issuance of the operation permit; and the authorization to operate is the operation permit.

For both permitting processes, the LHDs communicate with building inspections for release of building permits and certificates of occupancy.

The projected cost increases and loss for LHDs are listed in Table 3. These costs are subject to change in the future based on the number of EOPs submitted, LHD fee structure changes, and changes in the salaries for REHS. The Branch does anticipate that some LHDs will have to increase fees due to the loss of application fee revenues. Additionally, to retain staff, LHDs will have to continue to increase salaries for REHS.

Table 3. Projected Cost Increases and Losses to LHDs with EOP Option
System Description and Cost Breakdown, Fiscal Year 2021

360 gallons/day Conventional System (septic tank, gravity drainfield)	
Estimated Number of Permits	630
Average LHD Application Fees Lost	$462
Total Cost in Fees Lost (Number of Permits x Average Fee Lost)	($290,913)
Total Savings in Man Hours for EOP (Number of Permits x 6 man hours x Hourly Compensation*)	$135,811
Total Cost in Man Hours for EOP (Number of Permits x 4 man hours x Hourly Compensation*)	($90,541)
Net Savings (Cost)	**($245,643)**
2,880 gallons/day Conventional System (septic tank, pump tank, drainfield)	
Estimated Number of Permits	3
Average LHD Application Fees Lost	$462
Total Cost in Fees Lost (Number of Permits x Average Fee Lost)	($1,378)
Total Savings in Man Hours for EOP (Number of Permits x 10 Man Hours x Hourly Compensation*)	$1,072
Total Cost in Man Hours for EOP (Number of Permits x 4 Man Hours x Hourly Compensation*)	($429)
Net Savings (Cost)	**($735)**
4,500 gallons/day Conventional System (septic tank, pump tank, drainfield)	
Estimated Number of Permits	1
Average LHD Application Fees Lost	$462
Total Cost in Fees Lost (Number of Permits x Average Fee Lost)	($440)
Total Savings in Man Hours for EOP (Number of Permits x 30 Man Hours x Hourly Compensation*)	$1,026
Total Cost in Man Hours for EOP (Number of Permits x 4 hours x Hourly Wage*)	($137)
Net Savings (Cost)	**$450**
50,000 gallons/day TS-II Advanced Pretreatment with Drip Irrigation	
Estimated Number of Permits	1
Average LHD Application Fees Lost	$462
Total Cost in Fees Lost (Number of Permits x Average Fee Lost)	($440)
Total Savings in Man Hours for EOP (Number of Permits x 100 Man Hours x Hourly Compensation*)	$3,422
Total Cost in Man Hours for EOP (Number of Permits x 4 hours x Hourly Wage*)	($137)
Net Savings (Cost)	**$2,845**
All Systems, FY2021	
Total Cost of Fees Lost	($293,170)
Total Savings in Man Hours	$141,331
Total Cost in Man Hours for EOP	($91,243)
Net Savings (Cost)	**($243,082)**

*Based on 2014 local government salary information for REHS and projected growth in NC state and local government wages from IHS Connect, the mid-range hourly wage rate, including benefits, with at least five years of experience will be $35.95 in 2021.

State Government Impact

OSWP staff has two distinct groups: Regional Soil Scientists (RSS) and Engineers. Both groups work with the LHDs but in different areas. The Regional Soil Scientists work more frequently with the LHDs on a daily basis than the Engineers.

OSWP will see a slight decrease in the number of projects submitted to the State for review. This slight decrease is based on conversations with PEs in the field and review of the NOIs submitted to the LHDs during the first few months of the temporary rule. Based on the limited number of PE firms and individuals with experience in on-site wastewater treatment systems, we estimate that no more than three systems with a design daily flow of 3,000 gallons/day or greater a year will be permitted under the EOP. OSWP will also see a reduction in the number of small systems the LHDs ask for assistance with.

On average, based on review of internal records, the OSWP consults with the LHDs on approximately six percent of the total number of permits issued. The Branch anticipates that the number of smaller systems the OSWP consults with the LHDs on would be consistent at around six percent, but the overall number would drop based on the reduced number of permits issued by the LHDs. See Table 4 for the projected number of permits that OSWP staff would consult with LHDs.

Overall, this would provide an increase in the number of man-hours available for other OSWP projects.

Table 4. Number of Permits OSWP Staff Consult with LHDs

Year	Total Number of Permits Issued	Number of Permits Issued by LHD	Number of Permits Issued under EOP	Reduced Number of Permits OSWP Consults with LHD
2017	18,193	18,011	182	11
2018	18,801	18,519	282	17
2019	19,903	19,505	398	24
2020	20,679	20,059	620	37
2021	21,152	20,517	635	38

The projected cost increases and loss for the Branch are listed in Tables 5 and 6. OSWP staff will need to track NOI submittals and are required to attend the post-construction conference for systems with a design flow over 3,000 gallons/day. These costs are subject to change in the future based on the number of EOPs submitted and changes in the salaries for OSWP staff.

Table 5. Projected Cost Increases and Losses to OSWP RSS with EOP Option
System Description and Cost Breakdown, Fiscal Year 2021

360 gallons/day Conventional System (septic tank, gravity drainfield) through 2,880 gallons/day Conventional System (septic tank, pump tank, drainfield)	
Average OSWP RSS Man Hours Gained	7
Estimated Number of Permits OSWP Consults with LHD	36
Percent of total caseload	90%
Total Cost in Man Hours Gained (Number of Permits x Man Hours x Hourly Wage*)	$9,670
4,500 gallons/day Conventional System (septic tank, pump tank, drainfield)	
Average OSWP RSS Man Hours Gained	25
Estimated Number of Permits	1
Percent of total caseload	45%
Total Cost in Man Hours Gained (Number of Permits x Man Hours x Hourly Wage*)	$458
50,000 gallons/day TS-II Advanced Pretreatment with Drip Irrigation	
Average OSWP RSS Man Hours Gained	25
Estimated Number of Permits	1
Percent of total caseload	45%
Total Cost in Man Hours Gained (Number of Permits x Man Hours x Hourly Wage*)	$458
EOP Site Visits	
Total Cost in Man Hours for EOP Site Visits (Two Large Systems x 8 hours x Hourly Wage*)	($685)
Net Savings (Cost)	**$9,902**

*Based on 2014 state government salary information for Soil Scientists and projected growth in NC state and local government wages from IHS Connect the mid-range hourly wage rate with at least 10 years of experience, including benefits, will be $42.78 in 2021.

Table 6. Projected Cost Increases and Losses to OSWP Engineers with EOP Option
System Description and Cost Breakdown, Fiscal Year 2021

360 gallons/day Conventional System (septic tank, gravity drainfield) through 2,880 gallons/day Conventional System (septic tank, pump tank, drainfield)	
Average OSWP Engineer Man Hours Gained	7
Estimated Number of Permits OSWP Consults with LHD	36
Percent of total caseload	10%
Total Cost in Man Hours Gained (Number of Permits x Man Hours x Hourly Wage*)	$1,402
4,500 gallons/day Conventional System (septic tank, pump tank, drainfield)	
Average OSWP RSS Man Hours Gained	20
Estimated Number of Permits	1
Percent of total caseload	55%
Total Cost in Man Hours Gained (Number of Permits x Man Hours x Hourly Wage*)	$585
50,000 gallons/day TS-II Advanced Pretreatment with Drip Irrigation	
Average OSWP RSS Man Hours Gained	20
Estimated Number of Permits	1
Percent of total caseload	55%
Total Cost in Man Hours Gained (Number of Permits x Man Hours x Hourly Wage*)	$585
EOP Tracking and Site Visits	
Average OSWP Man Hours Spent Tracking NOIs Submitted and Drafting Annual Legislative Reports (40 hours x Hourly Wage*)	($2,233)
Total Cost in Man Hours for EOP Site Visits (Two Large Systems x 8 hours x Hourly Wage*)	($893)
Net Savings (Cost)	**($555)**

*Based on 2014 state government salary information for Engineers and projected growth in NC state and local government wages from IHS Connect, the mid-range hourly wage rate with at least 10 years of experience, including benefits, will be $55.83 in 2021.

Private Sector Impact

PEs and other licensed professionals will charge homeowners an increased cost when permitting under the EOP. The soil and site evaluation, engineering design, and installation costs will remain the same, but due to the increased liability for the licensed professionals, the overall costs will increase. Licensed professionals will benefit from this additional revenue. For those homeowners who choose EOP, the benefits of the private permitting process (i.e., more control of the timing of the process) are – at minimum – equivalent in value to the added cost.

Homeowners are not paying for time or overhead costs when the application fee is paid at the LHD for an on-site wastewater treatment system. No LHD recovers all the costs of issuing a permit with application fees. The cost differential is borne by the county budget, which provides the funds for LHDs to operate. Tax dollars collected by county agencies help fund the county budget. These tax dollars help support all county services, not just the services provided by the LHD. The homeowner is also directly paying the installer for their time and the materials purchased for the on-site wastewater treatment system.

When a licensed professional charges the homeowner for their services this charge will also include the licensed professional's time and overhead costs. These costs are most often included in the hourly rate charge for the licensed professional. All business have overhead charges that need to be paid: rent, utilities, paper, telephone bills, gas and insurance for company vehicles, etc. These costs are passed on to

the consumer as a fraction of the price that the consumer pays. It is the same with services provided by licensed professionals. A portion of the charges paid contributes to the business's overhead costs.

Additionally, all PE's that were consulted for cost information regarding the EOP also commented that as the design flow increases the cost will decrease. There will be an economy of scale that will occur with larger systems. For larger systems, the PE involved with the project will generally not work eight plus hours a day on the project. The PE will have people who help with the drawings, specifications, and other information for the project, and at a lower hourly rate. For smaller projects, since there is not as much involved in the system design, the PE will be involved for a larger percentage of the total project time at a higher hourly rate.

The type of projects the PEs will permit range from a 360 gallon/day single family home with a conventional on-site wastewater system to a 100,000 gallon/day condominium complex with retail stores served by advanced pretreatment and drip irrigation drainfield distribution. The fees charged by the licensed professionals will vary based on the facility type (residential or commercial), system size, treatment type required, and site limitations. The amount of insurance needed by the licensed professionals is going to change based on the specific project, so it is not easy to provide a definitive number for this cost increase.

The cost will ultimately be borne by the homeowner, but the licensed professionals will still be involved and have some liability for long-term system performance. System costs associated with EOP projects are shown in Table 7. The systems costs do not reflect construction costs such as site clearing, erosion control, and assume a straight forward installation with no problems.

Table 7. Private Sector Costs Associated with On-Site Wastewater Treatment Systems Permitted Under the EOP, 2016 dollars

System Description and Cost Breakdown	Average Cost to the Homeowner Permitted Under LHD	Average Cost to the Homeowner Permitted Under EOP
360 gallons/day Conventional System (septic tank to gravity drainfield)		
LSS Cost	NA	$800
PE Cost	NA	$4,500
Installation/Materials Cost	$5,000	$9,500
Construction Administration Cost for both PE and LSS	NA	$1,950
Total Cost	**$5,000**	**$16,750**
2,880 gallons/day Conventional System (septic tank, pump tank, drainfield)		
LSS Cost	$4,500	$4,500
PE Cost	$4,500	$8,750
Installation/Materials Cost	$50,000	$60,000
Construction Administration Cost for both PE and LSS	$2,000	$6,500
Total Cost	**$61,000**	**$79,750**
4,500 gallons/day Conventional System (septic tank, pump tank, drainfield)		
LSS Cost	$10,000	$10,000
PE Cost	$12,000	$17,000
Installation/Materials Cost	$92,500	$117,500
Construction Administration Cost for both PE and LSS	$4,250	$10,000
Total Cost	**$118,750**	**$154,500**
50,000 gallons/day TS-II Advanced Pretreatment with Drip Irrigation		
LSS Cost	$67,500	$67,500
PE Cost	$82,500	$137,500
Installation/Materials Cost	$2,750,000	$2,950,000
Construction Administration Cost for both PE and LSS	$17,500	$43,500
Total Cost	**$2,917,500**	**$3,198,500**

PEs permitting through the EOP, especially for large systems, will primarily permit new systems. PEs will generally not want to accept the liability for existing systems or repairs to malfunctioning systems that were permitted by the LHD. There will be too many variables and unknowns for them to want to accept the increased liability for these projects. If they do look to expand an existing system, the PE will probably word the contract to minimize their liability for what was previously installed.

When an on-site wastewater treatment system permitted by the LHD malfunctions, the homeowner applies for a repair permit and the LHD comes out to the site and troubleshoots the system and malfunction, trying to determine the cause of malfunction. Sometimes the reason for system malfunction cannot be determined or there are too many variables involved to isolate just one reason for the malfunction. The LHD designs a repair system using best professional judgement. The homeowner pays

for the system repair. If it is discovered that the LHD made a mistake during the permitting process, resulting in system malfunction, the LHD and State pay for the system repair.

EOP permits follow these same requirements. When an EOP system malfunctions, the homeowner must reach out to licensed professionals to help determine the cause of the malfunction and a repair option. An NOI for the repair must be submitted to the LHD.

The LHD will follow up with any complaints about malfunctioning on-site wastewater treatment systems and are also required to conduct compliance inspections in accordance with Rule 15A NCAC 18A .1961(j). If the LHD finds a malfunctioning system which was permitted under the EOP, they will direct the homeowner to contact the PE, LSS, and installer involved with the system design and installation.

The potential problem for the homeowner with a malfunctioning EOP on-site wastewater treatment system is determining the reason for malfunction. If the reason for malfunction is a mistake made during the permitting process, the homeowner could ultimately end up in court with their licensed professionals, trying to determine who was at fault and should pay to repair the malfunction. While this process is going on, the homeowner is still going to have a malfunctioning on-site wastewater treatment system that presents a public health hazard and must be repaired. These potential costs cannot be quantified.

V. ALTERNATIVES

Alternative #1: Maintain the current rules with no EOP and hire new LHD staff.
The current rules, prior to the EOP temporary rule, require all permitting to be done by the LHD. LHDs would need to hire additional staff to handle the increased workload. Staff needs to be trained and authorized to issue permits for on-site wastewater treatment systems. On average it takes six months from the time a new staff person is hired, attends centralized intern training, completes the authorization process, and can begin issuing permits. This still results in the permitting backlog lasting months before sufficient staff are hired and authorized.

Under this option, the costs are lower for the applicant. The applicant has to pay the LHD an application fee and the contractor for system installation. On average, for a three bedroom home (which has a design flow of 360 gallons/day) with a conventional on-site wastewater treatment system, the application fee and installation cost would be about $5,500. Less than five percent of all on-site wastewater treatment systems permitted through the LHD requires an LSS or PE, which would increase the cost of the system. The applicant is also not paying for the increased liability cost for the PE and LSS.

In summary, the costs are less expensive to the homeowner for the system overall, but the permitting process may take longer. The EOP option provides immediate relief for those applicants that can afford the increased cost.

Alternative #2: All permitting done through the EOP
This alternative would eliminate the LHD as a permitting option and place the entire permitting burden on the private sector. This option would also create a permitting backlog. The number of PEs with experience in on-site wastewater treatment systems is small, approximately 40 to 50 individuals and firms. Any significant increase to their workload would create a backlog. PEs would need to hire additional staff to handle the increased workload. Staff would need to be trained to design on-site wastewater treatment systems. At some point, the PEs would not be able to handle any additional system permitting.

The cost of permitting through the EOP is significantly greater than the application fees charged by the LHD. At a minimum, the cost for a conventional system permitted by the EOP process through system installation and building permit release would be approximately $17,000, compared to $5,000 through the LHD. This higher cost would impact homeowners significantly. The design and installation costs would stay the same. The higher cost is due to the increased liability the PEs and other licensed professionals incur by issuing permits.

On-site wastewater treatment system percentages are greatest in rural areas that do not have or cannot afford sewer infrastructure. These rural areas also generally have lower income levels. The cost to permit an on-site wastewater system could be high enough that it would discourage homeowners from buying land and building a house, because they can't afford wastewater treatment.

VI. UNCERTAINTY AND RISK ANALYSIS

The following three items have the greatest uncertainty in this analysis: the number of new building permits, number of on-site wastewater treatment systems permitted under the EOP option, and the on-site wastewater treatment system cost under the EOP.

If the economy improves and home construction increases, the EOP could see greater numbers of permits. Developers and homeowners may be willing to pay more to be able to receive their building permit in a shorter time frame, especially if the economy rebounds at a quick rate. LHDs will not be able to keep up with applications, so more homeowners may potentially seek out the EOP option as this could allow them to secure funding and begin construction sooner. At some point though, the private companies will reach a limit as to how many new projects they can design in a timely fashion and what happened during the building boom of the 2000's will occur then, backlogs with both the LHDs and the private companies. Both groups will need to increase staff to accommodate the backlog.

Conversely, if the economy and home construction stays about the same, there will be a limited pool of homeowners who are willing to pay more to receive their building permit sooner. The majority of on-site wastewater treatment systems serve single family homes. Many homeowners are not going to be able to afford the additional cost for a permit issued under the EOP.

The number of EOP permits could increase at a very slow rate, due to the cost associated with EOP permitting and a very slow building growth rate. Or, if the economy sees a sharp increase in growth, and permitting backlogs occur at the LHDs, the number of EOP permits could increase dramatically as people try to cash in on the economic upturn.

The on-site wastewater treatment system cost for EOP projects could vary greatly. The exact increase in liability insurance for licensed professionals who permit systems under the EOP is unknown. Projected costs for a range of systems were obtained by PEs, LSSs, and installers, but no one can predict the exact cost. Additionally, there are different types of liability insurance that the licensed professionals can carry, based on the type of project that will also impact the system cost.

Table 8 is a summary of the parameters used in this analysis to estimate the economic impact of EOP, as well as high and low estimates of those parameters. Table 9 shows the impact of the sensitivity analysis on the Net Present Value for the EOP option.

Table 8. Parameters Estimates for Number of Projected Permits, Number of Projected EOP Permits, and On-Site Wastewater Treatment System EOP Cost

	2017	2018	2019	2020	2021
Total Permits per Year					
Low Estimate	15,199	15,351	15,505	15,660	15,816
Model Estimate	18,193	18,801	19,903	20,679	21,152
High Estimate	22,112	22,851	24,190	25,133	25,709

	2017	2018	2019	2020	2021
EOP Share of Total Permits					
Low Estimate	0.5%	0.5%	0.5%	0.5%	0.5%
Model Estimate	1.0%	1.5%	2.0%	3.0%	3.0%
High Estimate	1.0%	1.5%	4.0%	7.0%	10.0%

	2017	2018	2019	2020	2021
EOP Permit Cost Difference					
Low Estimate					
360 gal/day conventional	$10,384	$10,626	$10,844	$11,077	$11,317
2,880 gal/day conventional	$13,411	$13,724	$14,006	$14,307	$14,617
4,500 gal/day conventional	$27,686	$28,332	$28,914	$29,535	$30,175
50,000 gal/day advanced with drip	$55,373	$56,665	$57,829	$59,070	$60,350
Model Estimate					
360 gal/day conventional	$11,938	$12,217	$12,468	$12,735	$13,011
2,880 gal/day conventional	$19,050	$19,495	$19,895	$20,322	$20,763
4,500 gal/day conventional	$36,323	$37,170	$37,933	$38,748	$39,587
50,000 gal/day advanced with drip	$285,500	$292,160	$298,162	$304,562	$311,163
High Estimate					
360 gal/day conventional	$15,240	$15,596	$15,916	$16,258	$16,610
2,880 gal/day conventional	$22,556	$23,082	$23,556	$24,062	$24,583
4,500 gal/day conventional	$44,959	$46,007	$46,953	$47,960	$49,000
50,000 gal/day advanced with drip	$497,339	$508,941	$519,397	$530,546	$542,044

Table 9. Sensitivity Analysis Impact on Net Present Values

	NPV of Costs	NPV of Benefits	Net Impact
Model Estimate	($25,154,979)	$48,013,557	$22,858,578
Low Parameter Estimates			
Total Permits per Year	($19,495,318)	$37,203,137	$17,707,819
EOP Share of Total Permits	($6,023,154)	$11,470,230	$5,447,075
EOP Permit Cost Difference	($21,526,897)	$40,757,393	$19,230,496
High Parameter Estimates			
Total Permits per Year	($30,569,876)	$58,355,840	$28,306,059
EOP Share of Total Permits	($56,037,685)	$107,016,554	$50,978,869
EOP Permit Cost Difference	($31,977,109)	$61,657,817	$29,680,708

VII. ECONOMIC IMPACT SUMMARY

Overall, the largest financial impact of the EOP option will be on the private sector, specifically the homeowners. They will be paying for the increased liability for all licensed professionals and taking the greatest risk if the system malfunctions. Licensed professionals will benefit from additional revenue, while homeowners opting to permit through EOP will receive the benefits of the private service. The LHDs will also be impacted. LHDs will lose fee revenue. The monies to keep the on-site wastewater program operating will need to come out of other county funds. The financial impact could also push the LHDs to increase fees, to offset the drop in fee income. The Branch will overall see a net benefit from reduced staff time that can be allotted to other projects. Table 10 summarizes the costs and benefits of the EOP option and the Net Present Value projected from 2017 to 2021.

Table 10. Benefits and Costs Summary, Including Net Present Value

	FY2017	FY2018	FY2019	FY2020	FY2021
BENEFITS					
State Gov't					
Staff time savings	$3,712	$5,768	$8,189	$12,826	$13,158
Local Gov't					
Staff time savings	$39,877	$61,952	$87,961	$137,773	$141,331
Private - Homeowner					
Faster permitting	$2,259,278	$3,583,934	$5,162,496	$8,218,493	$8,588,740
Fee Reduction	$84,051	$130,292	$183,901	$286,612	$293,170
Private - PE					
Increased Revenue for PE	$2,259,278	$3,583,934	$5,162,496	$8,218,493	$8,588,740
Total Benefits	**$4,646,197**	**$7,365,879**	**$10,605,043**	**$16,874,198**	**$17,625,139**
NPV of Benefits, FY2017$	**$48,013,557**				
COSTS					
State Gov't					
New Staff Time	$1,553	$1,556	$1,565	$1,573	$1,578
Reporting	$2,198	$2,202	$2,216	$2,227	$2,233
Local Gov't					
New Staff Time	$25,744	$39,996	$56,788	$88,946	$91,243
Lost Fee Revenue	$84,051	$130,292	$183,901	$286,612	$293,170
Private - Homeowner					
EOP Permit Cost	$2,259,278	$3,583,934	$5,162,496	$8,218,493	$8,588,740
Remediation Cost	U*	U*	U*	U*	U*
Private - PE					
New Staff Time	$65,760	$104,316	$150,262	$239,212	$249,989
Total Costs	**$2,438,584**	**$3,862,296**	**$5,557,228**	**$8,837,063**	**$9,226,953**
NPV of Costs, FY2017$	**$25,154,979**				
NET IMPACT					
State Gov't	($38)	$2,009	$4,408	$9,026	$9,347
Local Gov't	($69,918)	($108,336)	($152,728)	($237,785)	($243,082)
Private - Homeowner	$84,051	$130,292	$183,901	$286,612	$293,170
Private - PE	$2,193,519	$3,479,618	$5,012,233	$7,979,281	$8,338,751
Total	**$2,207,613**	**$3,503,582**	**$5,047,815**	**$8,037,135**	**$8,398,186**
NPV, FY2017$**	**$22,858,578**				

*"U" represents the unquantified private costs of remediation in the event of system failure under EOP permitting.
**NPV calculated as of July 1, 2016 using a 7% discount rate.

APPENDIX

15A NCAC 18A .1971 ENGINEERED OPTION PERMIT

(a) An Engineered Option Permit (EOP) on-site wastewater system, as defined by G.S. 130A-334(1g)~~, is available to an owner that~~ provides an alternative process for the siting, design, construction, approval, and operation of ~~the~~ a wastewater system without requiring the direct oversight or approval of the local health department. An owner choosing to use the EOP shall employ the services of a registered professional engineer licensed pursuant to G.S. 89C to prepare signed and sealed drawings, specifications, plans, and reports for the design, construction, operation, and maintenance of the wastewater system in accordance with G.S. 130A-336.1 and this Rule. Except as provided for in G.S. 130A-336.1 and in this Rule, an EOP system is subject to all applicable requirements of Article 11 of Chapter 130A of the General Statutes and all rules of this Section. Nothing in this Rule shall be construed as allowing any licensed professional to provide services for which he or she has neither the educational background, expertise, or license to perform, or is beyond his or her scope of work as provided for pursuant to G.S. 130A-336.1 and the applicable statutes for their respective profession.

(b) SITE EVALUATION: Prior to the preparation and submittal of a Notice of Intent to Construct (NOI) an EOP system, pursuant to G.S. 130A-336.1(b), the owner shall employ a licensed soil scientist pursuant to G.S. 89F to conduct an evaluation of soil conditions and site features in the proposed initial and repair drainfield areas for the EOP system, pursuant to G.S. 130A-335(a1) and G.S. 130A-336.1(e)(2). The owner shall employ a licensed soil scientist or a licensed geologist pursuant to G.S. 89E to evaluate geologic or hydro-geologic features as may be appropriate for the proposed site. This evaluation and documenting report shall be in accordance with the rules of this Section, and adhere to accepted standards of practice applicable to the type and size of the EOP system.

(c) NOTICE OF INTENT TO CONSTRUCT: The ~~Notice of Intent to Construct~~ (NOI) for an EOP System is to be submitted by the owner or a registered professional engineer authorized as the legal representative of the owner to the local health department in the county where the facility is ~~located~~ located. The NOI shall be on the common form provided by the Department. It shall include all of the information specified in G.S. 130A-336.1(b) and the following:

(1) The licensed soil scientist's, licensed geologist's, and contractor's name, license number, address, e-mail address, and telephone number.

~~(1)~~(2) Information required in Rules .1937(d) and .1937(e) of this Section for Improvement Permit and Construction Authorization applications;

~~(2)~~(3) Identification and location on the site plan of existing or proposed potable water supplies, geothermal heating and cooling wells, groundwater monitoring wells, and sampling wells for the facility. The registered professional engineer shall specifically reference any existing permit issued for a private drinking water supply, public water supply, or a wastewater system on both the subject and adjoining properties to provide documentation of compliance with setback requirements in Rule.1950 of this Section;

~~(3)~~(4) Documentation that the proposed wastewater system complies with all applicable federal, State, and local laws, regulations, rules and ordinances in accordance with G.S. 130A-336.1(e)(6);

~~(4)~~(5) Documentation ~~shall be provided~~ that the ownership and control requirements of Rule .1938(j) of this Section and the requirements for a multi-party agreement in Rule .1937(h) of this Section shall be met, as applicable; and

~~(5)~~(6) Proof of insurance for the registered professional engineer, licensed soil scientist, licensed geologist, and on-site wastewater contractor, as applicable.

(d) LOCAL HEALTH DEPARTMENT NOTICE OF INTENT COMPLETENESS REVIEW: The completeness review shall be performed by the authorized agent of the local health department pursuant to G.S. 130A-336.1(c). The local health department shall provide written confirmation of the completeness determination on the common form provided by the Department. If the local health department fails to act on an NOI within 15 business days of receipt, the owner or registered professional engineer may treat the failure to act as a determination of completeness.

(e) DESIGN PLANS AND SPECIFICATIONS: The registered professional engineer design, plans, and specifications for the EOP System shall be in accordance with the rules of this Section and with adherence to accepted standards of practice applicable to the type and size of the EOP system. The registered professional engineer design shall incorporate findings and recommendations on soil and site conditions, limitations, and any site modifications specified by the licensed soil scientist or licensed geologist, as applicable. When the registered professional engineer chooses to employ pretreatment technologies not yet approved in this State, pursuant to G.S. 130A-336.1(e)(1), the engineering report shall specify the proposed technology, and the associated siting,

installation, operation, maintenance, and monitoring requirements, including manufacturers endorsements associated with its proposed use.

(f) CONSTRUCTION OF WASTEWATER SYSTEM: No building permit for construction, location, or relocation shall be issued until after a decision of completeness of the ~~Notice of Intent~~ NOI is made by the local health ~~department~~ department, or the local health department fails to act within 15 business days pursuant to G.S. 130A-336.1(c). Construction of the wastewater system shall not commence until the system design, plans, and specifications have been provided to the on-site wastewater system contractor and the signed and dated statement by the contractor is provided to the owner, pursuant to G.S. 130A-336.1(e)(4)(b). The owner is responsible for assuring no modifications or alterations to the site for the wastewater system or the system repair area are made as a result of any construction activities for the facility before or after construction of the wastewater system, unless specifically approved by the design professional engineer, licensed soil scientist, or licensed geologist, as applicable.

(g) POST CONSTRUCTION CONFERENCE: Attendance of the Post-Construction Conference required pursuant to G.S. 130A-336.1(j) by the authorized agent of the local health department and by the Department (for systems designed for the collection, treatment, and disposal of industrial process wastewater or to treat greater than 3,000 gallons per day) is for the purpose of observing the location of the system and start-up conditions.

(h) AUTHORIZATION TO OPERATE: Prior to providing written confirmation for Authorization to Operate, the local health department shall receive the following:

(1) Documentation that all reporting requirements identified in G.S. 130A-336.1(l) have been met;
(2) Information set forth in Rule .1938(h) of this Section;
(3) System start-up documentation, including applicable baseline operating parameters for all components;
(4) Documentation by the owner or their legal representative that all necessary legal agreements, including easements, encroachments, multi-party agreements, and other documents have been properly prepared, executed and recorded in accordance with Rules .1937(h) and .1938(j) of this Section; and
(5) Record drawings.

The local health department shall use the State-approved form for written confirmation.

(i) OPERATION: The owner of the wastewater system approved pursuant to the EOP is responsible for maintaining the wastewater system in accordance with the written operation and management program required in G.S. 130A-336.1(i)(1) and .1961 of this Section.

(1) The operation and management program shall identify the system classification in accordance with Table V(a) of Rule .1961 of this Section.
(2) The operator required pursuant to G.S. 130A-336.1(i)(2) shall inspect the system and submit reports in accordance with Rule .1961(f) of this Section and the written operations and management program provided by the design professional engineer.
(3) The owner shall notify the local health department and the registered professional engineer who designed and certified the system permitted under this Rule of any site changes, changes in the operator or operator' duties, or any changes in ownership.

(j) SYSTEM MALFUNCTION: For systems permitted under this Rule, the owner shall contact the ~~design~~ professional engineer, ~~project~~ licensed soil scientist, licensed geologist, and contractor, as appropriate, for determination of the cause of system malfunction in accordance with Rule .1961(a) of this Section. For repair of a malfunctioning EOP system, this Rule shall be followed in conjunction with Rule .1961(l) of this Section. The operator shall notify the local health department within 48 hours of the system malfunction in accordance with Rule .1961(f) of this Section.

(k) SYSTEM CHANGE OF USE: For systems permitted under this Rule, the owner shall contact the professional engineer, licensed soil scientist, licensed geologist, and contractor, as appropriate, for determination as to whether or not the current systems meets all the requirements of this Section for a proposed facility change of use. The professional engineer, licensed soil scientist, licensed geologist, and contractor, as appropriate, shall determine modifications, if any, that shall be made to the wastewater system to meet all requirements of this Section based on the proposed change of use. A new NOI shall be submitted to the local health department in accordance with Paragraph (c) of this Rule for any proposed system modifications.

~~(k)~~(l) LOCAL HEALTH DEPARTMENT RESPONSIBILITIES: The local health department is responsible for the following activities related to the EOP system:

(1) Perform a completeness review of the ~~Notice of Intent to Construct~~ NOI ~~to verify inclusion of information required by this Rule~~ and ~~indicate~~ provide written verification of completeness determination;

(2) Attend the post-construction conference to observe location of system components and start-up conditions;

(3) Provide written confirmation of Authorization to Operate upon receipt of complete information required by this Rule;

(4) File all EOP documentation consistent with current permit filing procedures at the local health department;

(5) Submit a copy of the final ~~Notice of Intent~~ NOI common form and written confirmation of Authorization to Operate to the Department;

(6) Review the performance and operation reports submitted in accordance with Table V(b) of Rule .1961 of this Section;

(7) Perform on-site compliance inspections of the wastewater system in accordance with Table V(a) of Rule .1961 of this Section;

(8) Investigate EOP system complaints;

(9) Issue a notice of violation for systems determined to be malfunctioning in accordance with Rule .1961(a) of this Section. The LHD shall direct the owner to contact the ~~design~~ professional engineer, ~~project~~ licensed soil scientist, licensed geologist, and contractor, as appropriate, for determination of the reason of the malfunction and development of a ~~Notice of Intent to Construct~~ NOI for repairs; and

(10) Require an owner receiving a notice of violation to pump and haul sewage in accordance with Rule .1961(m) of this Section.

~~(l)~~(m) CHANGE IN LICENSED PROFESSIONALS:~~PROFESSIONAL ENGINEER:~~ The Owner may contract with another ~~registered professional engineer~~ licensed professional to complete an EOP project. An updated ~~Notice of Intent~~ NOI shall be submitted to the local health department.

History Note: *Authority G.S. 130A-335; 130A-336.1;*
Temporary Adoption Eff July 1, 2016;
Amended Eff. April 1, 2017.