



615 3rd Avenue South, Suite 700  
Nashville, Tennessee 37210

April 21, 2023

Mayor Rogers Anderson  
Williamson County, TN  
1320 West Main Street  
Franklin, TN 37064

RE: Sewage Disposal Management Department Summary Report

Dear Mayor Anderson:

Please find enclosed summary reports from the Thrivence stakeholder interviews and department workshop as well as the Barge Design Solutions (Barge) regulatory review. The Thrivence report summarizes stakeholder interviews and lists the top findings from the various stakeholders. While challenges were identified by both internal and external stakeholders, in the staff interviews fourteen of the fifteen staff members replied with at least one of the following three sentiments:

- I enjoy my job
- I like my coworkers
- I want to help people

These findings were reviewed by Thrivence with the Mayor's office, the Sewage Disposal Management (SDM) department leadership, and the SDM staff. A workshop was conducted with the SDM staff to develop strategies overcoming the top internal challenges. Following the staff offsite workshop, additional progress meetings are ongoing with the department leadership.

The Barge regulatory review examined the differences between the Williamson County and state regulations. The executive summary identifies sections, also noted in the main report, in which there are potentially excessive administrative requirements, very conservative assumptions, or overly broad or ambiguous language. The main body of the report examines each section of the Williamson County SDM regulations, unless noted otherwise, and includes the following information:

- Areas where the Williamson County regulations do not comply with the State minimum requirements
- Areas where the Williamson County regulations require more than the State regulations
- List of Significant Differences
- Do these differences have the potential to cause inefficiencies?
- Do these differences represent a significant technical difference between the two documents?

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- Can the differences between WCDSDM and TDEC regulations be reconciled with minimal impact, or will it take more significant changes to one of the regulations to reconcile?

It is our understanding that the Mayor's Office and county legal staff will coordinate with SDM staff and the Board of Health on the regulatory differences identified in the Barge report.

We appreciate the continued opportunity to work with the you and the SDM staff. If you have any questions, please feel free to contact me.

Sincerely,

Thrivence



Heather Smith Sawyer, PE  
Senior Consultant

c: Ms. Diane Giddens, Chief of Staff

Enclosures

Thrivence Summary Report

Barge Regulatory Review Report



Thrivence's approach consists of three phases: Explore, Develop, and Act. In the initial phase of Thrivence's scope, the current operations of the Williamson County Department of Sewage Disposal Management (Department) were reviewed to better understand the strengths as well as any opportunities for growth. This report provides the summary of data collected related to the Department from the interviews conducted in the Explore phase outlined in our proposal. A workshop will be conducted to conclude the Explore phase.

For the data collection effort, the following groups of stakeholders were interviewed:

Internal Staff – 15 staff members, the entire department at the time of interviews

External – a cross-section of stakeholders including private citizens, engineers, surveyors, installers, realtors, builders, County Commissioners

## 1. Internal Stakeholder Interviews

The Department interviews began in late October and included questions regarding the Department's mission and customer relationships; department functionality and culture; and regulation feedback from the Department staff. The interview tool used is included as an appendix to this report.

### 1.1. Mission

Most of the staff identified helping/protecting the public (10/15) and protecting the environment (9/15) as the primary goals of the department. Other missions identified were compliance enforcement (3/15), protecting property value (4/15), and profitability for Williamson County (4/15).

#### 1.1.1. Customer Relationship

The staff was asked to discuss their customer's main needs and the Department's impact on the customer.

#### 1.1.2. Customer Needs

The Department identified better processes as the main need of their customers (8/15). Additionally, the staff identified that customers need education on and a greater understanding of the regulations and processes (6/15). Other items identified by multiple Department staff are a user-friendly application management system (3/15), assistance in developing their property (2/15), and better oversight of consultants, contractors, and surveyors (2/15).

### 1.1.3. Department Impact on Customer

When asked to grade the department relative to the stakeholders, staff members provided the following grades:

- A = 2
- B = 1
- C = 7 (3 were C-)
- D = 3
- F = 1
- No grade = 1

The reasons most frequently given for the grade provided were workspace organization, including the ability to find files (8/15), leadership (6/15), communication (5/15), technology needs including digitized files, tables for field, etc. (5/15), and workload and staffing issues (5/15).

### 1.2. Department Functionality and Culture

The Department staff answered questions regarding the Department functionality, culture, and individual roles and responsibilities. When asked the questions “what do you like most about your work?” and “what is your favorite part of your job?” fourteen of the fifteen staff members replied with at least one of the following three sentiments:

- I enjoy my job
- I like my coworkers
- I want to help people

When asked how happy they are overall at work on a scale of 1 -10, the average response was 6.4. The main issues identified were the same as in the impact on the customer: workspace organization (8/15), leadership (6/15), communication (5/15). Other issues mentioned multiple times include compensation, inconsistent expectations of staff members, and the limited ability of staff to make decisions in their areas of expertise.

Principal comments about workspace organization are as follows:

- Not enough space for file storage
- Overall layout is not efficient: separation of the department on two floors, access to the breakroom is limited, individual desk space does not accommodate the work required
- Noise level in the front of the office is high

Principal comments regarding leadership are as follows:

- Director is not often accessible; limited interaction unless something is going poorly
- Inconsistent direction from leadership on interpretation of regulations

- Staff does not feel supported; culture promotes siloed work, gossip, and concern of adverse actions.

Principal comments regarding communication are as follows:

- Limited coordination meetings internally
- Inconsistent or lack of direction on communicating staff shortages or increasing timelines to customers
- Feedback on job performance is limited if it occurs at all.

### 1.3. Regulation and Process Feedback from Department Staff

An independent review of regulations is being performed by Barge Design Solutions. This section includes feedback from the Department staff on the regulations. Many of the staff noted that their comments apply not only to the regulations as they are written, but the interpretation of the regulations and the unwritten policies that are applied to application review.

Principal comments on the regulations from Department staff are as follows:

- Requirements for SSDS location maps
- Section 2K requirements, specifically the addition of heated and cooled space and the definition of a bedroom
- Requirement of curtain drain on all low-pressure pipe (LPP) systems
- Flow calculations for oversized bathing fixtures
- Exclusion of the use of mixed systems for primary and backup areas
- Differences in planning/zoning regulations and the Department regulations

Additional comments made by multiple staff members include unnecessary pump sizing calculation requirements and forced pump replacements; abandonment of functioning existing systems; soil area requirements; and the number of hard copies required.

Principal comments on processes from Department staff are as follows:

- IDT submissions: understanding of titling, handoff, what goes in IDT versus a paper file
- Unclear document retention requirements
- Lack of pre-application meetings
- Workflow for coordination with the zoning department
- Use of digital files

## 2. External Stakeholder Interviews

External stakeholders were asked to share the capacity in which they interacted with the Department, their experience with the Department, what went well, and what could improve. The external stakeholders interviewed include private citizens, engineers, surveyors, installers, inspectors, realtors, builders, and County Commissioners.

### 2.1. What Went Well

Most of those interviewed remarked that their interactions with the administrative staff and soil scientists was a positive experience in that those Department staff members tried to help. Many interviewees remarked that they appreciate the need for stringent regulations.

### 2.2. What Could Improve

#### 2.2.1. Overall Experience

Principal comments by external stakeholders on their overall experience are as follows:

- Most reported they had at least one negative experience with the Department Director and concern of adverse actions.
- Many felt that communication by the Department needs to be improved

#### 2.2.2. Regulation and Process Feedback from External Stakeholders

Similar to internal staff, external stakeholders remarked that their comments are applicable to the Department regulations and also the unwritten policies that are applied during application review.

Principal comments by external stakeholders on Department regulations and processes are as follows:

- Most would like Section 2K revised or eliminated
- Most would like the SSDS location map process revised or eliminated
- Most reported they felt LPP systems were forced upon applicants
- Many complained that the time required for approval is excessive

Other comments made by multiple external stakeholders include exclusion of mixed systems for primary and backup areas; soil area requirements; oversized bathroom fixture calculations; curtain drains required on all LPP systems; staff shortages; incorrect information in guidance document tables.

### 3. Conclusions

While most interviewees, internal and external, provided specific examples to accompany their comments, there were very definitive themes to the comments. The following are the issues identified most frequently overall:

- Section 2K
- SSDS location maps
- Department Leadership
- Communication

These findings were communicated internally, and additional steps were developed, including pre-meetings supporting a Department offsite.

### 4. Department Offsite

A Department offsite was held to address the information gathered during the Explore phase. The offsite allowed the Department to come together for a facilitated discussion to develop a plan of action to move forward as a cohesive unit. During this offsite, the Department staff and leadership communicated openly about the strengths and challenges in the Department. The Department worked together to develop micro-strategies for improvement in each of the three primary categories identified by the Department in the Explore phase: workspace organization, leadership, and communication. Following the Department offsite, progress meetings have been conducted with Department leadership to both refine the micro-strategies that were developed and continue to provide support.



Review of  
Regulations Governing On-site Sewage Disposal Systems of the Williamson County Department  
of Sewage Disposal Management (May 2000)  
and  
Regulations to Govern Subsurface Sewage Disposal Systems (0400-48-01, April 2014)

Prepared  
For: Williamson County, Tennessee

37998-00  
January 2023



## Executive Summary

### Principal Findings:

- (Section 2) The language that indicates that a *proposal to add heated/cooled* volume to a structure would result in non-compliance is questionable. A *proposal* does not change anything about the operation of the structure. The original sizing of the SSDS is based on the number of bedrooms, not the square footage (or cubed footage) of the house. The formula for excess flow due to oversized plumbing fixtures results in a dubious additional volume of wastewater. For comparison, textbooks propose typical unit flow rates for sewer wastewater (including infiltration and inflow) to be 100 gallons (gal)/person/day for a single individual and 63 gal/person/day for a 4-person home. It is difficult to justify the additional flow required for large tubs.
- (Section 4) TDEC regulations (0400-48-01) are mostly silent on how multiple structures or dual-uses structures are to be handled. The requirement that each structure must be served by its own SSDS (including duplicate field) is more stringent than what is included in the TDEC regulations. This would include separate SSDSs for
  - Structures include house, barn, shop, pool house, etc.
  - Wastewater collection systems include floor drains, horse washing stalls, dog kennels, etc.
  - Dwellings include houses, each half of a duplex, apartments in a home, etc.
  - The number of kitchens is used to determine the number of SSDSs required in single structures.
- (Section 5, 12, and 19) State regulations permit the system types allowed in Williamson County [(1) Conventional SSDSs, (2) Low Pressure Pipe systems including standard (LPP) and modified (MLPP) systems, and (3) mound systems]] and also permit (4) Waste Stabilization Lagoons and (5) Subsurface Drip Disposal systems as alternative SSDSs; effluent treatment devices including (6) Septic Tank or Dosing Tank Filters, (7) Conventional Sand Filters, (8) Recirculating Gravel Filters, and (9) Advanced Treatment Systems (ATs); and other devices used to improve the quality of septic effluent. Williamson County does not permit “Conventional Substitute Products” such as Large Diameter Gravel-less Pipe (LDGP) systems (large corrugated, perforated pipe without gravel), Chamber Systems (half pipe, no gravel), or Expanded Polystyrene synthetic aggregate systems. These restrictions limit the types of systems that could be used in Williamson County, reduce treatment flexibility, and therefore could limit the waste disposal options and reduce the life of SSDS disposal fields.
- (Section 7 and Section 24) There is a greater administrative burden associated with WCSDM permitting. In the State regulations, the installer is required to be permitted annually. In Williamson County, the installer must be licensed (Section 24) and then must obtain a permit to install for each system they are contracted to build, modify, or repair. Williamson County also requires annual Operating Permits for non-residential systems. The State regulations do not mention non-residential Operating Permits.

- (Section 13) WCDSDM setback requirements are both more conservative than the state requirements, and setbacks are required of more features. More setback categories and features reduce the land available for disposal fields, especially on smaller lots. Setbacks serve a purpose, but too much conservatism can limit the available land for disposal.
- (Section 14) The calculated volumes for oversized bathtubs seem to be overly conservative at first glance. For instance, a single 80-gal bathtub in a four-bedroom home will increase the required septic tank volume from 1,000 gallons (standard 30-gal tub) to 1,200 gallons, an increase of 200 gallons. This suggests that the larger fixture is resulting in an additional storage volume equivalent to 2.5 baths in the new bathtub.
- (Section 15, Appendix 1, 7, 8, 9) With regard to design of conventional SSDS systems:
  - Narrowing the permissible soil absorption rates, through soil evaluation or percolation testing, limits the land available for SSDSs. Using different absorption rates than those used by the State (Appendix 1 in WCDSDM vs Appendix 1 in TDEC) opens up a potential conflict with the property owner, especially if the State sanctioned values are more accommodating than the alternative values.
  - The issues with the oversized fixture allowance have already been discussed but appear to be overly conservative.
  - Table A8-1 appears to require larger disposal areas than would be predicted when using the approach of Appendix 9 (number of bedrooms, trench bottom area, trench bottom width, installation factor).
  - Trench bottom areas/bedroom are larger than those used by the State. This results in larger required disposal areas than elsewhere.
  - Pumping and maximum field size is required at lower daily flows in WCDSDM regulations (2,000 gpd) than in the State Regulations (3,000 gpd) This will result in more expensive and technically complex systems.
  - Grade boards are required in trenches in Williamson County. They are not required in the State regulations.
- (Section 19 and Appendix 1) With regard to design of Alternative Methods:
  - Use of dosing siphons for gravity applications is permitted for TDEC but not for WCDSDM.
  - Curtain/interceptor drains are required on all LPP designs for WCDSDM but not in the State regulations.
  - WCDSDM limits hydraulic loading to 0.275 gpd/ft<sup>2</sup> for soils with absorption rates between 10 and 45 MPI. The State allows loading rates up to 0.4 gpd/ft<sup>2</sup> for these soils, with the loading rate inversely related to the absorption rate.
  - WCDSDM limits absorption field slopes to 25% (MLPP systems are limited to 15% slopes), while the State allows up to 30% slopes.
  - WCDSDM requires a minimum safety factor of 2 feet to be applied to TDH when sizing pumps. The State uses minimum head requirements but does not use safety factors.

- (Section 20) WCDSDM requires numerous inspections during construction depending on the type of SSDS under construction. The standard inspection sequence includes up to 7 separate inspections for conventional and LPP systems, 10 inspections for MLPP systems, and 11 inspections for mound systems. The items inspected are outlined in Section 20 and are very thorough. While it is possible that some of these inspections can be paired up, each required inspection requires coordinating a meeting with WCDSDM staff and may take several days depending on demand, weather, and availability of staff. Failure to pass inspection requires a re-inspection. Also, Williamson County uses a flagging system to communicate results of inspections. There is nothing like this in the State regulations.
- (Section 24) Executing a draw on a surety bond or line of credit is not mentioned in the State regulations but is permitted in Williamson County when corrective measures identified in the corrective review session are not addressed.
- (Section 24) The rules governing license suspension seem to be overly broad. Immediate suspension (i.e., effective immediately) to prevent the conduct of the installer from violating any provisions of department rules seems more restrictive than what is outlined in TCA 4-5-320. In that regulation, immediate suspension is limited to matters of public health, safety, or welfare. Additionally, in a WCDSDM contested case hearing, the burden of proof, by a preponderance of the evidence, is on the installer. That is not the case in TCA 4-5-301 *et seq.*
- (Section 26) WCDSDM processes plats in three steps with associated submittal deadlines and approval requirements. Each phase includes specific requirements too numerous to list here (sketches, written documentation, soil maps, topo maps, final plats). Specific details are required at each phase. State regulations, on the other hand, require soil maps (high intensity soil map of general soil evaluation map), grid or lot staking of the lot and the soil evaluation area including percolation testing, and construction design plats. The submittals required by the State for soil evaluation mapping, grid or lot stakes, percolation test maps, and construction design plats may be combined into one submittal, while each step in Williamson County requires approval from the WCDSDM and the Planning Commission.
- (Section 27 and Appendix 2) WCDSDM does not allow general soil mapping; it infrequently uses high intensity soil mapping, but more commonly uses extra high intensity soil mapping. The State allows a general soil evaluation for subdivisions. Occasionally, WCDSDM will specify ultra-high intensity soil mapping. WCDSDM provides very detailed procedures for percolation testing (Appendix 2). WCDSDM does not permit or accept percolation tests for parcels that are (to be) platted and subdivided. Only soil mapping via extra high intensity evaluation is permitted for platted parcels. Additionally:
  - No percolation tests for commercial parcels
  - To qualify for percolation testing, a parcel must be greater than or equal to 5 ac
  - WCDSDM requires the use of their form entitled REPORT OF SOIL ABSORPTION TEST. It does not accept test results on the State form CN-0772, also titled REPORT OF SOIL ABSORPTION TEST. These two test forms are identically named, and the limitation placed on the use of the second form leaves potential for confusion.

- WCDSDM points out a number of procedural, non-technical conditions under which WCDSDM will invalidate a percolation test, including use of non-standard time notation and use of dimensions other than inches.
- To qualify for percolation testing slopes must be less than 20 percent in Williamson County. TDEC allows slopes of 30 percent and will permit slopes of 50 percent if soils will restrict the lateral movement of water.

## 1. Introduction

Tennessee Code Annotated (TCA) 68-221-401 *et seq.* governs the use of subsurface sewage disposal systems (SSDSs) in the State of Tennessee. As part of that law (TCA 68-221-403(a)(10)(B)) the Commissioner of the Tennessee Department of Environment and Conservation is required to enter into agreements with county health departments to implement the provisions of TCA 68-221-401 *et seq.* and regulations adopted in their respective areas of jurisdiction. As part of this agreement, the County is required to

- Meet the reporting requirements of the State
- Maintain standards that are at least as stringent as those of the state law and regulations
- Permit the Commissioner to exercise oversight and evaluation of performance of the county health departments and to terminate the agreement or contract for cause
- Allow the Commissioner to set other fiscal, administrative or program requirements to maintain consistency and integrity of the state-wide program, and
- Maintain adequate staffing and resources to implement and enforce the program in their jurisdictions.

The rules and regulations that provide for the implementation of TCA 68-221-401 *et seq.* and which govern SSDSs in Tennessee are provided in 0400-48-01 and therefore represent the minimum requirements for designing, installing, operating, and regulating SSDSs in the State. The document is made up of 24 chapters and three appendices and covers 78 pages.

The Williamson County Department of Sewage Disposal Management (WCDSDM) administers septage system design, installation, and maintenance in Williamson County, Tennessee. As part of their program, WCDSDM has developed a set of regulations. In contrast to the State regulations, the WCDSDM regulations include 36 sections and 19 appendices and covers 381 pages.

A side-by-side comparison was conducted to determine any areas where the Williamson County regulations do not comply with the State minimum requirements or areas where the Williamson County regulations require more than the State regulations, and to highlight areas where any difference have the potential to cause inefficiencies.

### Principal Findings

- (Section 2) Requiring the existing system to be brought up to current regulations (for an otherwise functioning system) could place a heavy financial burden on the owner of the existing system. Also questionable is the language that indicates that a proposal to add heated/cooled volume to a structure would result in non-compliance. A proposal does not change anything about the operation of the structure. The original sizing of the SSDS is based on the number of bedrooms, not the square footage of the house. The formula for excess flow due to oversized plumbing fixtures results in a dubious additional volume of wastewater.
- (Section 4) TDEC regulations (0400-48-01) are mostly silent on how multiple structures or dual-uses structures are to be handled. The requirement that each structure must be served by its own SSDS (including duplicate field) is more stringent than what is included in the TDEC regulations. This would include separate SSDSs for

- Structures include house, barn, shop, pool house, etc.
- Wastewater collection systems include floor drains, horse washing stalls, dog kennels, etc.
- Dwellings include houses, each half of a duplex, apartments in a home, etc.
- The number of kitchens is used to determine the number of SSDSs required in single structures in Williamson County.
- (Section 5, 12, and 19) State regulations permit the system types allowed in Williamson County [(1) Conventional SSDSs, (2) Low Pressure Pipe systems including standard (LPP) and modified (MLPP) systems, and (3) mound systems]] and also permit (4) Waste Stabilization Lagoons and (5) Subsurface Drip Disposal systems as alternative SSDSs; effluent treatment devices including (6) Septic Tank or Dosing Tank Filters, (7) Conventional Sand Filters, (8) Recirculating Gravel Filters, and (9) Advanced Treatment Systems (ATSS); and other devices used to improve the quality of septic effluent. Williamson County does not permit “Conventional Substitute Products” such as Large Diameter Gravel-less Pipe (LDGP) systems (large corrugated, perforated pipe without gravel), Chamber Systems (half pipe, no gravel), or Expanded Polystyrene synthetic aggregate systems. These restrictions limit the types of systems that could be used in Williamson County, reduce treatment flexibility, and therefore could limit the waste disposal options and reduce the life of SSDS disposal fields.
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    - WCDSM limits absorption field slopes to 25% (MLPP systems are limited to 15% slopes), while the State allows up to 30% slopes.
    - WCDSM requires a minimum safety factor of 2 feet to be applied to TDH when sizing pumps. The State uses minimum head requirements but does not use safety factors.
- (Section 20) WCDSM requires numerous inspections during construction depending on the type of SSDS under construction. The standard inspection sequence includes up to 7 separate inspections for conventional and LPP systems, 10 inspections for MLPP systems, and 11 inspections for mound systems. The items inspected are outlined in Section 20 and are very thorough. While it is possible that some of these inspections can be paired up, each required inspection requires coordinating a meeting with WCDSM staff and may take several days depending on demand, weather, and availability of staff. Failure to pass inspection requires a re-inspection. Also, Williamson County uses a flagging system to communicate results of inspections. There is nothing like this in the State regulations.
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  - No percolation tests for commercial parcels.
  - To qualify for percolation testing, a parcel must be greater than or equal to 5 acres.
  - WCDSDM requires the use of their form entitled REPORT OF SOIL ABSORPTION TEST. It does not accept test results on the State form CN-0772, also titled REPORT OF SOIL ABSORPTION TEST. These two test forms are identically named, and the limitation placed on the use of the second form leaves potential for confusion.
  - WCDSDM points out a number of procedural, non-technical conditions under which WCDSDM will invalidate a percolation test, including use of non-standard time notation and use of dimensions other than inches.
  - To qualify for percolation testing slopes must be less than 20 percent in Williamson County. TDEC allows slopes of 30 percent and will permit slopes of 50 percent if soils will restrict the lateral movement of water.

## 2. Sections 1 and 3: Introduction and Definitions

Sections 1 and 3 are introductory and were not reviewed



### 3. Section 2: Statutory Authorizations and Enforcement

Section 2 of the WCSDM regulations addresses the basis for the County's authority to regulate SSDSs along with its authority to provide variance to, provide amendments to, or reopen permitting of existing systems.

The State does not address these issues in TDEC: 0400-48-01.

#### **Areas where the Williamson County regulations do not comply with the State minimum requirements**

None.

#### **Areas where the Williamson County regulations require more than the State regulations**

##### Section J (Vested Interests)

- Allows any amendment to a preliminary or final plat which creates additional lots on that plat results in all plats (existing and new) being governed by the current regulations, meaning the existing system must be brought up to current regulations.

##### Section K (Nonconforming Systems)

- Encroachments on a legal nonconforming system permitted after October 1, 2000, must be corrected before any additional permits or approvals are issued. Those permitted before October 1, 2000, will be permitted to remain as long as (a) there is proof that the system was legally permitted prior to October 1, 2000, (b) the system is not failing, (c) no modifications are being proposed that would increase the load to the SSDS, and (d) no addition of HVAC or plumbing fixtures are being proposed.
- A legal non-conforming system may remain as long as the following do not occur:
  - The system is failing
  - A health or safety issues occurs (polluted potable supply)
  - Heated or cooled space is proposed to be added
  - Space is added that would increase the load to the system
  - Additional plumbing fixtures are proposed
  - Additional bedrooms are added
  - Kitchens are added

#### **List of Significant Differences**

See above.

#### **Prioritization / Recommendation**

##### **Do these differences have the potential to cause inefficiencies?**

Yes. Requiring the existing system to be brought up to current regulations (for an otherwise functioning system) could place a heavy financial burden on the owner of the existing system. Also questionable is the language that indicates that a *proposal* to add heated/cooled *space* to a structure would result in non-compliance. A proposal does not change anything about the operation of the structure. The original sizing of the SSDS is based on the number of bedrooms, not the square footage of the house. The

formula for excess flow due to oversized plumbing fixtures results in a dubious additional volume of wastewater.

**Do these differences represent a significant technical difference between the two documents?**

Yes. The State regulations do not address modifications after installation. The comments above regarding adding conditioned space and larger bathtubs are significant technical differences. For comparison, textbooks propose typical unit flow rates for sewerage wastewater (including infiltration and inflow) to be 100 gallons (gal)/person/day for a single individual and 63 gal/person/day for a 4-person home. It is difficult to justify the additional flow required for large tubs.

**Can the differences between WCDSM and Tennessee Department of Environment and Conservation (TDEC) regulations be reconciled with minimal impact, or will it take more significant changes to one of the regulations to reconcile?**

Because there is no language in the State regulations on this matter, it is unclear if it could be reconciled with minimal impact.

#### 4. Section 4: Use of Subsurface Sewage Disposal Systems

Section 4 of the Williamson County regulations defines an SSDS and describes where one or more systems are required. This section requires a separate SSDS (including a duplicate disposal field) for each structure served by running water, any structure that has a system that collects wastewater, creating a point discharge, and any structure utilized for human dwelling.

- Structures include house, barn, shop, pool house, etc.
- Wastewater collection systems include floor drains, horse washing stalls, dog kennels, etc.
- Dwellings include houses, each half of a duplex, apartments in a home, etc.
- The number of kitchens is used to determine the number of SSDSs required in single structures.

Structures with dual or multiple uses (an office in a barn that has a restroom and a horse washing stall) require a separate SSDS for each use.

The Tennessee Code Annotated (TCA 68-221-414) requires any person “who intends to construct a house or establishment” to show evidence that the house is served by sewer, or the person has applied for a permit to construct an SSDS. There is no detail in the TDEC regulations (0400-48-.01 through 0400-48-.24) on what is included in an establishment or whether a barn, pool house, or mother-in-law apartment constitutes a separate “establishment.”

**Areas where the Williamson County regulations do not comply with the State minimum requirements**

This section provides more detail and the conditions on which SSDSs are required. In this way it exceeds State requirements.

**Areas where the Williamson County regulations require more than the State regulations**

TDEC regulations (0400-48-.01 through 0400-48-.24) are mostly silent on how multiple structures or dual-uses structures are to be handled. The requirement that each structure must be served by its own SSDS (including duplicate field) is more stringent than what is included in the TDEC regulations.

## List of Significant Differences

Significant differences include:

- Structures include house, barn, shop, pool house, etc.
- Wastewater collection systems include floor drains, horse washing stalls, dog kennels, etc.
- Dwellings include houses, each half of a duplex, apartments in a home, etc.
- The number of kitchens is used to determine the number of SSDs required in single structures.

## Prioritization / Recommendation

### **Do these differences have the potential to cause inefficiencies?**

Yes.

- These requirements have the potential to increase the number of systems per lot.
- These requirements have the potential to increase the cost of construction for sanitary service for a given lot. Building a single system to handle the domestic sanitary service on a given lot would be more efficient.

### **Do these differences represent a significant technical difference between the two documents?**

Because the TDEC regulations do not provide guidance on how to handle dual-use systems or multiple structure systems, the requirements for dedicated systems for each structure and each use in the WCDSM regulations seem to represent a conservative reading of the TDEC regulations and represent a potentially significant difference between the two documents.

### **Can the differences between WCDSM and TDEC regulations be reconciled with minimal impact, or will it take more significant changes to one of the regulations to reconcile?**

Because there is no language in the State regulations on this matter, it is unclear if it could be reconciled with minimal impact.

## 5. Section 5: Types of Subsurface Sewage Disposal Systems Authorized for Use

Section 5 of the WCDSM regulations only authorizes three types of SSDs: (1) Conventional SSDs, (2) Low Pressure Pipe systems including standard (LPP) and modified (MLPP) systems, and (3) mound systems. Williamson County will make an exception if there is no existing system or the existing system needs repair and soil conditions are insufficient for the three systems indicated above, and will permit (1) Modified Wisconsin Mound systems or (2) MLPP systems with extra modification.

### **Areas where the Williamson County regulations do not comply with the State minimum requirements**

- WCDSM does not provide for “Conventional Substitute Products” such as Large Diameter Gravel-less Pipe (LDGP) systems (large corrugated, perforated pipe without gravel), Chamber Systems (half pipe, no gravel), or Expanded Polystyrene synthetic aggregate systems. These are allowed in State regulations.
- State regulations permit the three system types mentioned above and also permit (4) Waste Stabilization Lagoons and (5) Subsurface Drip Disposal systems as alternative SSDs; effluent

treatment devices including (6) Septic Tank or Dosing Tank Filters, (7) Conventional Sand Filters, (8) Recirculating Gravel Filters, and (9) Advanced Treatment Systems (ATs); and other devices used to improve the quality of septic effluent.

#### **Areas where the Williamson County regulations require more than the State regulations**

None.

#### **List of Significant Differences**

Significant differences include:

- Inclusion of “Conventional Substitute Products” in TDEC regulations
- Inclusion of Waste Stabilization Lagoons and Subsurface Drip Disposal Systems as alternative SSDSs
- Approval of effluent treatment devices including Septic Tank or Dosing Tank Filters
- Approval of Conventional Sand Filters and Recirculating Gravel Filters
- Approval of ATs

#### **Prioritization / Recommendation**

##### **Do these differences have the potential to cause inefficiencies?**

Yes, these restrictions limit the types of systems that could be used in Williamson County and therefore could limit the waste disposal options. ATs could provide more treatment flexibility. Filters could extend the life of SSDS disposal fields.

##### **Do these differences represent a significant technical difference between the two documents?**

The main difference is the increased variety of technology available to address wastewater disposal in the TDEC regulations as opposed to those authorized in the WCDSM regulations.

##### **Can the differences between WCDSM and TDEC regulations be reconciled with minimal impact, or will it take more significant changes to one of the regulations to reconcile?**

TDEC already permits these technologies. Reconciliation would not be limited by State regulations. WCDSM would need to approve these technologies and integrate them into their regulations and get approval from the Board of Health.

## **6. Section 6: Pit Privies and Composting Toilets**

Section 6 of the WCDSM regulations addresses the approved use of pit privies and composting toilets. The State addresses pit privies and composting toilets in 0400-48-.17. Both WCDSM and the State regulations permit pit privies and composting toilets under limited conditions.

#### **Areas where the Williamson County regulations do not comply with the State minimum requirements**

WCDSM largely comply with the State regulations. Neither the State regulations or WCDSM permit pit privies when a facility has running water and an acceptable means of disposing of wastewater.

## Areas where the Williamson County regulations require more than the State regulations

- Set back requirements: State regulations permit pit privies if they are located at least 50 feet from a water supply and more than 10 feet from an inhabitable building or property line. WCDSDM regulations require that pit privies be located at least 75 feet from any water supply source, 25 feet from a water course of any type and any structure, and more than 50 feet from a property line.
- Lot size: WCDSDM restricts pit privies to large (>10-acre) lots with no habitable structures or electricity.
- Residence duration: WCDSDM limits residence on lots served by pit privies to 30 days of continuous habitation.
- Agricultural use: WCDSDM permits pit privies for agricultural activities for large (>25-acre) and remote (>250 feet from a restroom) agricultural operations.
- Soil conditions: WCDSDM requires a minimum of 5 feet of soil depth with no indication of water table for the construction of pit privies.

## List of Significant Differences

Setback and lot size requirements in the WCDSDM regulations could limit the use of pit privies, but none of the items cited above are particularly significant.

## Prioritization / Recommendation

### Do these differences have the potential to cause inefficiencies?

No.

### Do these differences represent a significant technical difference between the two documents?

No.

### Can the differences between WCDSDM and TDEC regulations be reconciled with minimal impact, or will it take more significant changes to one of the regulations to reconcile?

Yes, these differences could be reconciled with minimal impact, but there is not likely a lot of motivation to alter these regulations.

## 7. Section 7: Permits

Section 7 of the WCDSDM regulations addresses permits associated with construction, maintenance, and operation of SSDSs. The State addresses permits in TDEC: 0400-48-01-.06.

The Williamson County regulations are much more detailed with regards to permits than the State regulations are. Both regulations require a construction permit to install, alter, or repair an SSDS, and both will issue Temporary Construction Permits (State) or Repair Permits (WCDSDM) for emergency repairs. In the State regulations, the installer is required to be permitted annually. In Williamson County, the installer must be licensed (Section 24) and then must obtain a permit to install for each system they are contracted to build, modify, or repair.

Williamson County also requires annual Operating Permits for non-residential systems. The State regulations do not mention non-residential Operating Permits.

In Williamson County, approved changes to standing permits (Construction or Operating) require the permit application to be updated and resubmitted, along with the permit fee, for re-evaluation. Changes to standing permits will not be approved solely to reduce the cost of a permitted system. Changes to standing permits will not be approved for systems under construction.

Operating Permits are transferrable as long as the property's use does not change.

Notices of violation and cease-and-desist orders can be issued for operating outside the conditions of the permit.

### **Areas where the Williamson County regulations do not comply with the State minimum requirements**

None.

### **Areas where the Williamson County regulations require more than the State regulations**

See Appendix 6

Before a Construction permit is issued

- Submit Application for Zoning Certificate
- Pay the appropriate fee
- Complete Affidavit for Certification of Proposed Dwelling Capacities – Max Tub Size
- Obtain spec sheet for any bathing fixture greater than 30 U.S. gallons
- Complete Affidavit for Certification of Proposed Dwelling Capacities – Number of Bedrooms
- Complete Affidavit for Certification of Initial and Reserve SSDS Installation Areas

Operating permits for commercial and industrial systems

Individual permits to install for each job

### **List of Significant Differences**

- There are several forms, affidavits, and fees that must be completed or paid prior to issuance of a construction permit resulting in a greater administrative burden.
- Permits to install are required for each system to be constructed by a licensed installer.
- Design plans required for Alternative systems prior to issuance of a construction permit.
- Individual lot assessment
- There is no annual operating permit in the State regulations.

### [Prioritization / Recommendation](#)

#### **Do these differences have the potential to cause inefficiencies?**

Yes, the WCDSM procedure is more complicated than the procedure outlined in the State regulations, and the requirements are more proscribed and seemingly rigid. There is a greater administrative burden associated with WCDSM permitting.

#### **Do these differences represent a significant technical difference between the two documents?**

No.

**Can the differences between WCDSDM and TDEC regulations be reconciled with minimal impact, or will it take more significant changes to one of the regulations to reconcile?**

It would take some effort to reconcile the WCDSDM permitting approach with the general regulations for permitting outlined in the State regulations. For instance, the State does not mention operating permits for commercial parcels, so that would need to be added to the State regulations or deleted from WCDSDM regulations.

## 8. Section 8: Installation of Septic Systems on Platted Parcels of Land

Section 8 of the WCDSDM regulations summarize the requirements for installation of SSDSs on platted parcels.

The State generally covers this topic in TDEC: 0400-48-01-03.

**Areas where the Williamson County regulations do not comply with the State minimum requirements**

None.

**Areas where the Williamson County regulations require more than the State regulations**

- Requirements for items to be included on WCDSDM plats – disposal areas, the type of SSDS required, restrictions regarding the number of bedrooms, permitted use of oversized bathtubs, restrictions pertaining to the use of the parcel.
- Field requirements for WCDSDM, such as vegetative control; field staking lot corners, disposal field areas, building envelopes, and easements; and fencing disposal area.
- Use of extra high-intensity soil evaluation in WCDSDM regulations vs. high-intensity or general soil evaluation for TDEC.

**List of Significant Differences**

- See above.

[Prioritization / Recommendation](#)

**Do these differences have the potential to cause inefficiencies?**

No.

**Do these differences represent a significant technical difference between the two documents?**

No.

**Can the differences between WCDSDM and TDEC regulations be reconciled with minimal impact, or will it take more significant changes to one of the regulations to reconcile?**

The differences could be reconciled; however, the bathtub issue is woven into the WCDSDM regulations, making it more difficult to reconcile since it would need to be updated in multiple places. Alternatively, the bathtub correction could be removed from the WCDSDM regulations if there was an appetite to do so. (There is no such correction in the State regulations.)

The use of extra high-intensity soil mapping in Williamson County as opposed to high intensity or general soil evaluations in the TDEC regulations is a significant difference.

## 9. Section 9: Septic Systems and Unplatted Parcels of Land

Section 9 of the WCDSM regulations addresses installation of SSDSs on unplatted parcels.

The State addresses unplatted parcels briefly in TDEC: 0400-48-01-.04.

### **Areas where the Williamson County regulations do not comply with the State minimum requirements**

None.

### **Areas where the Williamson County regulations require more than the State regulations**

The WCDSM claims the authority to specify the following:

- The type of SSDS to be used
- Location of primary and secondary disposal sites
- Restriction on size, type, and usage of any proposed structure

### **List of Significant Differences**

See above.

### **Prioritization / Recommendation**

#### **Do these differences have the potential to cause inefficiencies?**

No.

#### **Do these differences represent a significant technical difference between the two documents?**

No.

#### **Can the differences between WCDSM and TDEC regulations be reconciled with minimal impact, or will it take more significant changes to one of the regulations to reconcile?**

Reconciling the WCDSM regulations with the State regulations would be done with minor impact.

## 10. Section 10: Design and Construction of Tanks

Section 10 of the WCDSM regulations addresses the design and construction of tanks. The State addresses design of septic tanks in TDEC: 0400-48-01-.09.

The WCDSM and State regulations address design of septic tanks essentially identically.

WCDSM regulations also include Section 17 which addresses septic tank and pump tank installation, including instructions for installing tanks in rock and methods to repair over-excavation. There is no analogous section in the State regulations.

Other minor differences:



- WCDSDM requires that the tank inlet invert enter the tank at least 3 inches above the liquid level. TDEC requires that the tank inlet invert enter the tank at least 1 inch above the liquid level but states that they *prefer* 3 inches.
- WCDSDM indicates that all tanks are subject to testing for structural integrity and water tightness to verify that they meet ASTM C 1227. TDEC only requires that tanks be structurally sound and watertight.

**Areas where the Williamson County regulations do not comply with the State minimum requirements**

None

**Areas where the Williamson County regulations require more than the State regulations**

See above. The differences are minor.

**List of Significant Differences**

None

[Prioritization / Recommendation](#)

**Do these differences have the potential to cause inefficiencies?**

No.

**Do these differences represent a significant technical difference between the two documents?**

No.

**Can the differences between WCDSDM and TDEC regulations be reconciled with minimal impact, or will it take more significant changes to one of the regulations to reconcile?**

Currently, the sections are very similar, so it would be fairly easy to reconcile the two regulations.

## 11. Section 11: Grease Traps

Section 11 of the WCDSDM regulations addresses Grease Traps. The State addresses grease traps in TDEC: 0400-48-01-.14.

The WCDSDM and State regulations are very similar in how they address grease traps.

- Both the State regulations and WCDSDM require grease traps to be sized based on efficiency ratings calculated from number of sinks and fixtures. WCDSDM requires that this data be submitted to the department for review/approval.
- WCDSDM specifies commercial and industrial facilities requiring grease traps, including residential properties with “Accessory Commercial Food Preparation Use.”
- WCDSDM allows testing of septic effluent in lieu of installing a grease trap, provided effluent quality is maintained. WCDSDM limits septic effluent to biochemical oxygen demand (BOD) < 170 milligrams/liter (mg/L); total suspended solids (TSS) < 60 mg/L; and fats, oils, and grease (FOG) < 25 mg/L. Annual testing results are required to be submitted to WCDSDM within 30 days. A single violation of the limits or a failure to report results requires the installation of a grease trap within 30 days or a cease-and-desist order will be issued.

- Pre-manufactured grease traps are permitted by WCDSDM, but the design basis and calculations must be submitted to WCDSDM for approval.
- WCDSDM requires that grease traps be pumped regularly and that a copy of the pumping contract be filed with the department.
- A maintenance schedule must be filed with WCDSDM.

**Areas where the Williamson County regulations do not comply with the State minimum requirements**

None

**Areas where the Williamson County regulations require more than the State regulations**

Approval: WCDSDM requires submission of

- Tank design data for cast-in-place or premanufactured tanks
- Septic effluent quality when testing is used in lieu of a grease trap
- Pumping manifest
- Maintenance schedule

**List of Significant Differences**

None

[Prioritization / Recommendation](#)

**Do these differences have the potential to cause inefficiencies?**

Yes, more administrative effort is required due to the submittal requirements.

**Do these differences represent a significant technical difference between the two documents?**

No.

**Can the differences between WCDSDM and TDEC regulations be reconciled with minimal impact, or will it take more significant changes to one of the regulations to reconcile?**

The two regulations could easily be reconciled, but it is not likely a priority.

[12. Section 12: Use of Effluent Treatment and Pre-Treatment Devices and Methods](#)

Section 12 of the WCDSDM regulations indicates that pump tank filters, sand filters, and gravel filters shall not be used in Williamson County. The State addresses effluent treatment devices in TDEC: 0400-48-01-.10. Unlike the County, the State permits conventional sand filters, recirculating gravel filters, and ATSS.

**Areas where the Williamson County regulations do not comply with the State minimum requirements**

By not allowing the above technology, the WCDSDM does not permit the minimum equipment allowed by the State.

**Areas where the Williamson County regulations require more than the State regulations**

Approval: WCDSDM requires submission of the following:

- Tank design data for cast-in-place or premanufactured tanks
- Septic effluent quality when testing is used in lieu of a grease trap
- Pumping manifest
- Maintenance schedule

#### **List of Significant Differences**

Not allowing ATs or sand and gravel filters limits treatment options.

#### [Prioritization / Recommendation](#)

#### **Do these differences have the potential to cause inefficiencies?**

Yes, not allowing filters or ATs potentially limits the efficiency of the SSDS.

- Septic effluent filters improve septic tank effluent quality and reduce solids loading to disposal trenches. Theoretically, this should minimize pollutant loading to the disposal field and clogging of soils in disposal trenches and extend the life of the SSDS when recommended maintenance is performed.
- ATs should also extend the life of the SSDS by improving the quality of water disposed of in the trench by performing more of the treatment in the ATs.

#### **Do these differences represent a significant technical difference between the two documents?**

Yes, the Williamson County regulations limit the types of treatment systems that can be used in the county..

#### **Can the differences between WCDSDM and TDEC regulations be reconciled with minimal impact, or will it take more significant changes to one of the regulations to reconcile?**

The approval of effluent filters or ATs could be approved with minimal impact since they are permitted by the State. Maintenance of the systems and oversight of the maintenance operations would take longer to implement.

## 13. [Section 13 of the Regulations Governing On-site Sewage Disposal Systems of the](#)

### **Description of Section 13: Minimum Setback Restrictions for Septic System Components**

- Section 13 of the WCDSDM regulations addresses setback requirements for SSDSs. The State addresses setback requirements in TDEC: 0400-48-01-.11.
- TDEC provides setbacks from two features: Septic Tank/Pump Tank and SSDS Area. WCDSDM requires setbacks from these two process areas along with setbacks from the Dwelling, Solid PVC Piping, and any Drainage Improvement.
- TDEC lists 8 setback categories composing 15 features requiring setbacks. WCDSDM lists approximately 13 setback categories made up of 35 features.

- For the eight common categories between the WCDSDM and TDEC regulations, the setback limits for WCDSDM are always equal to (3 categories) or greater than (5 categories) the TDEC values.

Category	Septic / Pump Tank		SSDS Area/Disposal field	
	TDEC	WCDSDM	TDEC	WCDSDM
Water Supply or Well, Spring, or Cistern	50		50	
Dwellings or House or Structure	5		10	
Property lines		<b>10</b>		<b>25</b>
	10		10	
		<b>20</b>		<b>20</b>
Easement boundaries	10		10	
Utility Easements		10		10
Gullies, Ravines, Dry Stream Beds, Natural Drainageways, Sinkholes, Streams, cut banks:	15		25	
Gullies, Ravines, Drainageway or Ditch, Embankment or Escarpments, Retaining Wall, Roadside Ditch, Sinkholes, Stream Bank:		<b>25</b>		25
Water lines	10		10	
Utility lines		10		10
House to tank connections:	--		10	
Soil pipe		<b>10</b>		<b>25</b>
Septic and dosing tanks:	--		5	
Septic tank or Pump Tank		--		<b>10</b>

#### Areas where the Williamson County regulations do not comply with the State minimum requirements

None.

#### Areas where the Williamson County regulations require more than the State regulations

- WCDSDM regulations comply with, and go beyond, the minimum State regulations. Setback requirements are both more conservative than the State requirements, and setbacks are required of more features.
- See the table for common differences. Red values indicate setback requirements that are greater than State requirements.
- See the table on page S13-1 in the WCDSDM regulations to see all setbacks required.

#### List of Significant Differences

- Deeper setback distances shrink the land area available for disposal fields. This becomes especially true on smaller lots.
- There are setbacks from irrigation systems, overhead utilities, porches, retaining walls, sidewalks, driveways, swimming pools, and utility easements in the WCDSDM regulations, but not in the State regulations.

## Prioritization / Recommendation

### **Do these differences have the potential to cause inefficiencies?**

- As mentioned above, more setback categories and features reduce the land available for disposal fields, especially on smaller lots. Setbacks serve a purpose, but too much conservatism can limit the available land for disposal.

### **Do these differences represent a significant technical difference between the two documents?**

Yes. There are a number of added features, and the magnitude of common items is routinely higher in the WCDSM regulations than the State regulations. This has the effect of limiting the potential area available for disposal fields in Williamson County.

### **Can the differences between WCDSM and TDEC regulations be reconciled with minimal impact, or will it take more significant changes to one of the regulations to reconcile?**

Reconciliation would require matching setback requirements for common items in both regulations, and then negotiating inclusion of the remaining items with the State (or deleting them from WCDSM regulations).

## 14. Section 14: Minimum Septic Tank Capacity

Section 14 of the WCDSM regulations covers requirements for sizing septic tanks. The State addresses septic tank capacity in TDEC: 0400-48-01-.08.

The main difference in how TDEC and WCDSM address septic tank capacity is that WCDSM uses a correction term to require additional septic tank volume when oversized bathtubs are installed in the residence. The required volume (V) is calculated by adding the adjusted capacity apportioned for bathtubs (subtracting the standard tub capacity of 30 gallons from the oversized bathing fixture capacity [OSBFC] applied to the total number of bedrooms [NBDR]) to the normal projected daily flow (NPDF) attributable to a residence without oversized fixtures:

$$V = [(OSBFC - 30) \times (NBDR)] + NPDF$$

### **Areas where the Williamson County regulations do not comply with the State minimum requirements**

This correction for oversized bathing fixtures is more restrictive than TDEC regulations.

### **Areas where the Williamson County regulations require more than the State regulations**

By including this correction term in the sizing calculation for total septic tank volume, larger septic tanks, dosing tanks, and disposal fields will be required.

### **List of Significant Differences**

Large fixture calculation is the major difference between the regulations.

## Prioritization / Recommendation

### **Do these differences have the potential to cause inefficiencies?**

Yes, the potential is greater when the fixtures are added to an existing home. The additional volume will result in the need for larger dosing tanks and disposal fields.

**Do these differences represent a significant technical difference between the two documents?**

Yes, the calculated volumes seem to be overly conservative at first glance. For instance, a single 80-gal bathtub in a four-bedroom home will increase the required septic tank volume from 1,000 gallons (standard 30-gal tub) to 1,200 gallons, an increase of 200 gallons. This suggests that the larger fixture is resulting in an additional storage volume equivalent to 2.5 baths in the new bathtub.

**Can the differences between WCDSM and TDEC regulations be reconciled with minimal impact, or will it take more significant changes to one of the regulations to reconcile?**

The oversized fixture adjustment could be modified, but it would likely require a study to determine what, if any, increase in flow would result from the installation of an oversized fixture. Given contemporary society's penchant for showers, there is some question whether an appreciable difference in volume would be required to accommodate these fixtures. This is a principal difference between the two regulations, touches numerous parts of the SSDS design, and likely makes legacy systems out of compliance with existing regulations.

## 15. Section 15: Conventional Subsurface Sewage Disposal Systems

Section 15 of the WCDSM regulations covers the design of conventional SSDSs. The State addresses conventional SSDSs in TDEC: 0400-48-01-.07.

**Areas where the Williamson County regulations do not comply with the State minimum requirements**

WCDSM regulations comply with, and at times are more stringent than, State regulations.

**Areas where the Williamson County regulations require more than the State regulations**

- Permissible soil absorption rate: **15**-75 minutes per inch (MPI) (WCDSM) vs **10** – 75 MPI (TDEC)
- Permissible soil absorption rate through percolation testing: 75 MPI to **105** MPI (WCDSM) vs 75 to **120** (TDEC using alternative systems)
- Some soil absorption rates used by WCDSM (Appendix 1, Chapter 9) vary from values used by TDEC (Appendix II).
- For WCDSM, daily design flow is adjusted for oversized bath fixtures (See Section 14).
- For WCDSM, values in Appendix 8 seem biased to higher-than-required disposal areas when applied to the approach in Appendix 9.
- Why are three conventional fields required for 60 MPI soils??
- Why are conventional SSDS not allowed on 75 MPI soils? See section 15.A.1.(d)
- Values used by WCDSM for the required trench bottom area per bedroom are uniformly higher than those used by TDEC. WCDSM's required trench bottom areas are 5% to 51% greater than TDECs. Increased area requirements at higher percolation rates lead to larger disposal fields.
- WCDSM limits disposal area slope to 25% or less. TDEC limits disposal area slopes to 30% unless soil conditions limit lateral movement, in which case the slopes are limited to 50%.
- WCDSM requires soils in disposal area to be undisturbed. TDEC excludes soils containing fill unless soil conditions can be shown to filter and prevent outcropping of septic effluent.

- WCSDSM limits lot sizes to 1 acre. TDEC limits lot sizes to 20,000 to 25,000 ft<sup>2</sup>.
- WCSDSM requires 36 inches of natural soil over bedrock or the upper limits of a water table and 24 inches over any non-rock restrictive layer.
- WCSDSM assumes **405** ft<sup>2</sup>/bedroom based on percolation testing while TDEC assumes **370** ft<sup>2</sup>/bedroom.
- Disposal field distribution design dictated by WCSDSM depending on existing grade
  - Recirculating: <4 inches/100 ft.
  - Serial: > 4 inches/100 ft.
  - Controlled Distribution: passive distribution to trenches of equal length. Required on sites where absorption >60 MPI or sites < 60 MPI where topography, soil properties, or sewage flow rates necessitate its use
- WCSDSM specifies controlled distribution devices and limits the use of some to specific applications.
- For WCSDSM, controlled distribution systems are required for soil absorption rates of 61 to 105 MPI and for soil absorption rates between 20 and 60 MPI with favorable site conditions. TDEC does not require controlled distribution systems based on soil absorption rates.
- Pumping: Required for flows greater than **2,000** gallons per day (gpd) (WCSDSM, also requires effluent brake device, controlled distribution devices – D-box, pressure distribution manifold, alternating valves) vs. for flows greater than **3,000** gpd (TDEC, requires splash boxes, pumps, or siphons).
- For WCSDSM the maximum field size is based on flows of **2,000** gpd. For TDEC, the maximum field size is based on **3,000 gpd**.
- The top of the disposal field media must be 4 inches below the invert of the septic tank for WCSDSM, while TDEC only requires that the media be “below the invert of the tank outlet.”
- TDEC requires **2** inches of straw on top of the media, while WCSDSM requires **4** inches of straw.
- Max trench grade **2** inch per 100 ft. (WCSDSM) vs **4** inch per 100 ft. (TDEC)
- Grade boards required for WCSDSM but not for TDEC.
- WCSDSM requires fencing required around disposal field. TDEC simply prohibits parking on the site.
- Trenches should be between 100 ft. (max.) and 40 ft. (min.) for WCSDSM systems, unless longer trenches are approved in writing. TDEC does not place a limit on trench length.
- For WCSDSM, trenches should be 24 inches deep. TDEC allows trenches between 24 inches to a maximum of 48 inches deep.
- TDEC permits water lines to cross a tight line if (a) water line is sleeved with Schedule 40 PVC with 10 excess feet per side of tight line and (b) water line passes one foot or more ABOVE tight line. WCSDSM prohibits water lines from crossing, passing through, going under, or coming within 10 feet of an SSDS field area or any of its related components such as septic tank, tight lines, curtain drains, etc.
- For WCSDSM, all trench widths are 36 inches. TDEC does not dictate a trench width.
- For WCSDSM, all pipe under pavement should be sleeved with Schedule 80 PVC and sleeves should extend 10 feet beyond limit of pavement. TDEC only requires pipe under paved surfaces to be Schedule 40 PVC with a minimum diameter of 3 inches.

#### List of Significant Differences

The list above summarizes the differences between TDEC and WCDSM regulations. Significant differences include:

- Permissible soil absorption rates and differences with State values
- Design flow with oversized fixture allowance
- Conservatism in Appendix 8 Table
- Trench bottom area per bedroom higher for WCDSM
- Pumping required at 2,000 gal./d (WCDSM) vs. 3,000 gal./d (TDEC)
- Use of grade boards required for WCDSM

### Prioritization / Recommendation

#### **Do these differences have the potential to cause inefficiencies?**

Yes.

- Narrowing the permissible soil absorption rates, through soil evaluation of percolation testing, limits the land available for SSDSs. Using different absorption rates than those used by the State opens up a potential conflict with the property owner, especially if the State sanctioned values are more accommodating than the alternative values.
- The issues with the oversized fixture allowance have already been discussed.
- Table A8-1 appears to require larger disposal areas than would be predicted when using the approach of Appendix 9 (number of bedrooms, trench bottom area, trench bottom width, installation factor).
- Trench bottom areas/bedroom are larger than those used by the State. This results in larger required disposal areas that elsewhere.
- Pumping and maximum field size is required at lower daily flows in WCDSM regulations (2,000 gpd) than in the State Regulations (3,000 gpd) This will result in more expensive and technically complex systems.
- Grade boards are required in trenches in Williamson County. They are not required in the State regulations.

#### **Do these differences represent a significant technical difference between the two documents?**

Yes, for the reasons stated these differences can result in larger, more expensive, and more complex systems. In some cases, it might dictate an alternative system instead of a conventional system.

#### **Can the differences between WCDSM and TDEC regulations be reconciled with minimal impact, or will it take more significant changes to one of the regulations to reconcile?**

Yes, many, if not all, of the differences could be addressed internally, but would require a softening of the Williamson County regulations.

## 16. Section 16: Utilization of Sewage/Effluent Pumps

Section 16 of the WCDSM regulations describes the approved approach for designing pumping systems.

The State addresses pumping and dosing systems in TDEC: 0400-48-01-.12.



### **Areas where the Williamson County regulations do not comply with the State minimum requirements**

- Use of dosing siphons for gravity applications is permitted for TDEC but not for WCDSDM.

### **Areas where the Williamson County regulations require more than the State regulations**

- Minimum flow is the flow to achieve 2.5 feet per second (fps) scouring velocity (WCDSDM) vs. a value of 10 gpm (TDEC).
- Allowance of 20% for fittings (WCDSDM) vs. calculated fittings losses (TDEC).
- Minimum pressure head is 5 feet (WCDSDM) vs. 1 foot (TDEC).
- Minimum safety factor of 2 feet is applied to total dynamic head (TDH) (WCDSDM) vs. no safety factor (TDEC).
- Minimum TDH is 10 feet (WCDSDM) vs. no minimum TDH (TDEC).
- TDEC allows access risers with a minimum diameter of 16 inches if the threaded union on the pump outlet pipe is located within 2 feet of the top of the access riser. WCDSDM requires access risers to be 24 inches.
- When a check valve is utilized, WCDSDM requires it to be installed with threaded fittings in the pump tank, between the gate valve and the union, for maintenance. WCDSDM requires a vent hole to be drilled in the discharge pipe behind the check valve, inside the pump tank, to purge the pump of trapped air. WCDSDM requires an extra 2 gpm to be added to the pumping rate to compensate for flow through the vent hole. There are no TDEC regulations on this topic.
- WCDSDM requires supply lines to be buried 12 inches or more to prevent freezing or the use of insulating material. TDEC does not have this requirement.
- WCDSDM limits pump controls to either sealed mercury float switches or sealed self-contained mechanically activated float switches. Diaphragm type switches or vertically rising mechanical float switches are not acceptable. TDEC only requires that controls are sealed and adjustable.
- WCDSDM contains an extensive subsection on electrical requirements. TDEC regulations are mostly silent on electrical requirements.
- If the float controls require adjustment once the system has been brought online, WCDSDM requires notification. TDEC does not require notification.
- Siphon breakers are required when pumping downhill (1/4-inch hole [WCDSDM] vs. a 5/32-inch hole [TDEC]). WCDSDM requires 2 additional gpm to be added to the pumping rate to compensate for flow through the siphon and hole.
- WCDSDM does not permit tapping connections. TDEC does not have this prohibition.

### **List of Significant Differences**

There are a number of minor differences between the two regulations and typically the differences are more conservative for WCDSDM. The differences are not significant differences. The State permits the use of dosing siphons, while Williamson County does not.

### **Prioritization / Recommendation**

**Do these differences have the potential to cause inefficiencies?**

No.

**Do these differences represent a significant technical difference between the two documents?**

No.

**Can the differences between WCDSDM and TDEC regulations be reconciled with minimal impact, or will it take more significant changes to one of the regulations to reconcile?**

The differences can be reconciled easily.

## 17. Section 17: Installation of Septic Tanks and Pump Tanks

Section 17 of the WCDSDM regulations describes methods for installing septic and pump tanks.

The State does not address tank installation in its regulations.

**Areas where the Williamson County regulations do not comply with the State minimum requirements**

None

**Areas where the Williamson County regulations require more than the State regulations**

As the State regulations do not cover tank installation, this section is considered beyond the scope of the State regulations. It provides a summary of best practices for installing tanks in excavations and methods for providing a stable base for over excavated tanks to reduce the risk of settling.

**List of Significant Differences**

N/A

**Prioritization / Recommendation**

**Do these differences have the potential to cause inefficiencies?**

N/A

**Do these differences represent a significant technical difference between the two documents?**

N/A

**Can the differences between WCDSDM and TDEC regulations be reconciled with minimal impact, or will it take more significant changes to one of the regulations to reconcile?**

Because there is no language in the State regulations on this matter, it is unclear if it could be reconciled with minimal impact.

## 18. Section 18: Minimum Pump Tank Capacity

Section 18 of the WCDSDM regulations describes sizing of pump tanks. The State addresses minimum pump tank capacity in TDEC: 0400-48-01-.12(1)(b). Both regulations require the minimum pump tank or dosing chamber volume to be twice the volume of a normal projected wastewater flow (one day of emergency storage).

**Areas where the Williamson County regulations do not comply with the State minimum requirements**

TDEC allows the minimum volume of a pump tank or dosing chamber to be reduced if a shelf spare is available. If an assembly composed of an alternate pump, in-tank supply line, and float switch assembly

is onsite and ready to deploy, the minimum volume of the tank is 150% of a normal daily flow plus the static level in the tank. WCDSDM does not contain this provision.

#### **Areas where the Williamson County regulations require more than the State regulations**

None

#### **List of Significant Differences**

None

#### [Prioritization / Recommendation](#)

#### **Do these differences have the potential to cause inefficiencies?**

No.

#### **Do these differences represent a significant technical difference between the two documents?**

No.

#### **Can the differences between WCDSDM and TDEC regulations be reconciled with minimal impact, or will it take more significant changes to one of the regulations to reconcile?**

Yes.

## [19. Section 19: Alternative Methods of Subsurface Sewage Disposal](#)

Section 19 of the WCDSDM regulations covers alternative methods of subsurface sewage system disposal. The State addresses alternative methods in TDEC: 0400-48-01-.15.

#### **Areas where the Williamson County regulations do not comply with the State minimum requirements**

- The only alternative systems approved for use by WCDSDM are LPP including modified LPP, and mound systems. The State permits LPP, MLPP, mounds, waste stabilization lagoons, subsurface drip disposal systems, septic tank, or dosing tank filters, conventional sand filters, recirculating sand or gravel filters, and (ATs as alternative systems.
- WCDSDM requires curtain/interceptor drains on all LPP designs. WCDSDM also requires earthen dams to be placed in all lateral trenches every 20 feet to improve septic effluent distribution. There is no requirement for curtain/interceptor drains or earthen dams in the State regulations.

#### **Areas where the Williamson County regulations require more than the State regulations**

- For WCDSDM, alternative systems must be designed by an engineer licensed in the State of Tennessee and designs must adhere to a very specific and detailed format prior to review and possible approval. At WCDSDM's discretion, the design engineer may be required to supervise part or all of the construction and may be required to submit a written summary of observations and findings.
- For TDEC, only large (>750 gpd) alternative systems must be designed by an engineer. There is no multipage submittal outlined in the State regulations. When designed by an engineer, the State requires construction supervision and submittal of as-built drawings and written certification that the design was constructed in accordance with the plans and specifications.

- The design requirements for LPP systems are found in Appendix 3 of the WCDSM regulations. They are generally consistent with the design criteria outlined in previous sections for conventional systems (septic tanks, pump tanks, dosing systems, etc.).
- Curtain/interceptor drains are required on all LPP designs for WCDSM.
- WCDSM limits hydraulic loading to 0.275 gpd/ft<sup>2</sup> for soils with absorption rates between 10 and 45 MPI. The State allows loading rates up to 0.4 gpd/ft<sup>2</sup> for these soils, with the loading rate inversely related to the absorption rate.
- WCDSM limits absorption field slopes to 25% (MLPP systems are limited to 15% slopes), while the State allows up to 30% slopes.
- WCDSM requires LPP systems to be placed in 6-inch trenches while the State requires 12-inch trenches.
- WCDSM requires laterals use only 5/32-inch holes, while the State allows holes between 5/32-inch and 1/4-inch.
- For dosing systems, WCDSM flows are based on 150 gpd/bedroom with the modification for large bathtubs. No such modification is included in the State regulations.
- Like conventional systems, WCDSM requires vent holes and siphon breaker holes in certain systems and pumped flow rates are modified to account for these features. No modification is included in the State regulations.
- WCDSM requires a minimum safety factor of 2 feet to be applied to TDH when sizing pumps. The State uses minimum head requirements but does not use safety factors.
- A section for mound systems is reserved as Appendix 4 in the WCDSM regulations, but there are no design guidelines in Appendix 4.

#### **List of Significant Differences**

- Curtain/interceptor drains are required on all LPP designs for WCDSM.
- All alternative systems must be designed by an engineer licensed in the State of Tennessee and designs must adhere to a very specific and detailed format prior to review and possible approval for WCDSM.
- WCDSM limits hydraulic loading to 0.275 gpd/ft<sup>2</sup> for soils with absorption rates between 10 and 45 MPI. The State allows loading rates up to 0.4 gpd/ft<sup>2</sup> for these soils, with the loading rate inversely related to the absorption rate.

#### **Prioritization / Recommendation**

##### **Do these differences have the potential to cause inefficiencies?**

Yes.

Requirement for curtain / interceptor drain increases complexity and cost of the system. It may also require site modifications to be able to drain to daylight.

LPP systems designed and inspected by a licensed engineer will be more expensive than those installed under TDEC regulations.

Limiting hydraulic loading will require a larger disposal field for low MPI soils.

##### **Do these differences represent a significant technical difference between the two documents?**

No, the requirement for a drain on all LPP systems will increase complexity.

**Can the differences between WCDSM and TDEC regulations be reconciled with minimal impact, or will it take more significant changes to one of the regulations to reconcile?**

It would not take a lot to reconcile these regulations.

## 20. Section 20: Inspection of SSDS Installations

Section 20 of the WCDSM regulations describes the various inspection procedures conducted during the planning, design, and construction of SSDSs in Williamson County. There is no analogous section in the State regulations.

### **Areas where the Williamson County regulations do not comply with the State minimum requirements**

This section goes beyond the requirements of the State regulations.

### **Areas where the Williamson County regulations require more than the State regulations**

Section 20 of the WCDSM regulations outlines the inspection process for SSDSs. There is no analogous section in the State regulations.

The State regulations require inspection:

1. With respect to the construction of conventional systems: “No system shall be covered without the inspection and authorization: of the regulator.”
2. With respect to the construction of large (>750 gpd) systems, the State would require the “engineer to agree, in writing, to monitor the installation and construction” of the SSDS, provide as-built plans, and certify that the SSDS was constructed “in accordance with the design specifications.”
3. With respect to packaged subsurface drip systems: “a representative of the company holding the packaged approval shall inspect the system to certify that the system was installed to the approved specifications.”

WCDSM requires numerous inspections during construction depending on the type of SSDS under construction. The standard inspection sequence includes up to 7 separate inspections for conventional and LPP systems, 10 inspections for MLPP systems, and 11 inspections for mound systems. The items inspected are outlined in Section 20 and are very thorough. The goal is to ensure that the system under inspection is built to the standards outlined in the regulations and indicated in the approved plans.

Section 20 also includes a description of a flag system to communicate compliance with the regulations (results of the inspection). There is nothing like this in the State regulations. Flags are one of three colors:

- GREEN – Inspected and approved
- YELLOW – Inspected, minor deficiencies
- RED – Major deficiencies

Both minor and major deficiencies are defined in this section.

Minor and major deficiencies are addressed in a corrective review session onsite and are to be addressed within 10 days of the inspection. Failure to remedy the deficiency can result in license revocation and a draft on the installer's line of credit. While the installer (contractor) may suggest remedies (in writing), the inspector may mandate the method and specification regarding the corrective action. Reinspection will only occur once all deficiencies have been addressed.

Reinspection fees will not be assessed for the first yellow flag re-inspection. Failure to address minor deficiencies in the re-inspection will trigger fees.

Re-inspection fees are triggered for red flag re-inspections.

The requirements for as-built documentation are specified in this section and in Appendix 15. Appendix 15 lists 16 items to include on the as-built sketch.

### **List of Significant Differences**

A description of the inspections required is listed in Section 20 and includes:

- Soil Check Inspection (All)
- Layout Inspection (All)
- Site Preparation Inspection (MLPP or Mound)
- Modification Placement and Incorporation Inspection (MLPP)
- Imported Fill Inspection (Mound)
- Mound Distribution Network Inspection (Mound)
- Pressure Head Verification (LPP or MLPP and any system using pumped conveyance)
- Clay Cap Inspection (Mound)
- LPP Open Trench Inspection (LPP or MLPP)
- Drain Inspection (LPP and systems that require drainage improvement practices)
- Trench Inspection (Conventional Only, OPTIONAL)
- Final Inspection (Similar to the inspection required by the State)

Corrective Review Sessions and Flagging: These mandatory meetings are not part of the State regulations, nor is the flagging system used in inspection.

### [Prioritization / Recommendation](#)

#### **Do these differences have the potential to cause inefficiencies?**

Yes.

While it is possible that some of these inspections can be paired up, each required inspection requires coordinating a meeting with WCDSM staff and may take several days depending on demand, weather, and availability of staff. Failure to pass inspection requires a re-inspection.

Corrective reviews are also aimed at fixing incorrect layouts or designs but the need to stop work and schedule a meeting with staff will lead to inefficiencies.

#### **Do these differences represent a significant technical difference between the two documents?**

These differences are aimed at trying to ward off problems before they occur so that the final inspection goes smoothly. There is not this level of inspection in the TDEC regulations.

**Can the differences between WCDSDM and TDEC regulations be reconciled with minimal impact, or will it take more significant changes to one of the regulations to reconcile?**

The two documents can only be reconciled if WCDSDM discontinues the requirement for these inspections or meetings, or if TDEC adopts the inspections as part of their regulations. Neither option seems likely without significant effort.

## 21. Section 21: Backfilling & Final Grading of SSDS Installations

Section 21 of the WCDSDM regulations provides regulations for proper backfilling of SSDS installations. There is no analogous chapter in the TDEC regulations.

**Areas where the Williamson County regulations do not comply with the State minimum requirements**

N/A

**Areas where the Williamson County regulations require more than the State regulations**

WCDSDM has the following requirements and prohibitions regarding backfilling:

- Backfilling should not occur during wet conditions.
- Excavation materials (such as those derived from tank installations) should not be used in disposal fields.
- The installation area should be crowned and shaped to prevent ponding.
- Department recommends lightweight, track-type equipment to avoid compacting soils and changing their porosity.

Placement of excess backfill on the disposal field (>5 inches above natural grade) is prohibited.

There are few instructions for backfilling in the State regulations. Backfill must be carefully tamped (0400-48-.07(4)(f)); soil material excavated from trenches should be used in backfilling and should be left mounded over the trenches until initial settling has taken place (0400-48-.07(4)(n)).

### List of Significant Differences

None of these requirements are significant, and all represent good practices.

### Prioritization / Recommendation

**Do these differences have the potential to cause inefficiencies?**

No.

**Do these differences represent a significant technical difference between the two documents?**

No.

**Can the differences between WCDSDM and TDEC regulations be reconciled with minimal impact, or will it take more significant changes to one of the regulations to reconcile?**

Because there is minimal language in the State regulations on this matter, it is unclear if it could be reconciled with minimal impact.

## 22. Section 22: Maintenance and Care of an On-site Sewage Disposal System

Section 22 of the WCDSM regulations addresses maintenance of SSDSs. The State addresses maintenance of SSDSs in TDEC: 0400-48-01-.13 and in Section 0400-48-01-.23

Both the State and WCDSM place the burden for maintenance on the property owner. Both consider SSDSs as permanent easements that remain in perpetuity or until sewer service is provided.

Maintenance activities for WCDSM include septic tank pumping, pump tank pumping, effluent filter cleaning, and grease trap pumping. ATS contracts are required when an ATS is proposed to the State.

### **Areas where the Williamson County regulations do not comply with the State minimum requirements**

None.

### **Areas where the Williamson County regulations require more than the State regulations**

- WCDSM requires the property owner to be responsible for protecting the SSDS and keeping them free of unauthorized encroachments or disturbances such as excavation or filling, landscaping, driveways or parking areas, unauthorized structures or additions, or gutters or drains (S22-1-2).
- WCDSM provides recommended pumping intervals.
- WCDSM recommends that property owners refrain from flushing excessive fats, oils, and greases, nonbiodegradable or toxic chemicals, or trash to the system.
- WCDSM recommends periodic inspection of SSDS electrical and controls.
- WCDSM recommends against the use of garbage grinders.

### **List of Significant Differences**

None

### **Prioritization / Recommendation**

#### **Do these differences have the potential to cause inefficiencies?**

No.

#### **Do these differences represent a significant technical difference between the two documents?**

No

#### **Can the differences between WCDSM and TDEC regulations be reconciled with minimal impact, or will it take more significant changes to one of the regulations to reconcile?**

Currently, the sections are very similar, so reconciliation could be achieved with minimal impact.



## 23. Section 23: Erosion and Sediment Control Practices

Section 23 of the WCDSM regulations addresses erosion and sediment control (E&SC) practices associated with the construction of SSDSs. The State does not address E&SC in their regulations; however, the State maintains comprehensive E&SC guidance in the *Tennessee Erosion and Sediment Control Handbook* (2012). E&SC practices are usually covered in a County-issued grading permit.

### **Areas where the Williamson County regulations do not comply with the State minimum requirements**

None

### **Areas where the Williamson County regulations require more than the State regulations**

None, as long as WCDSM applies E&SC requirements consistent with the State handbook

### **List of Significant Differences**

None

### **Prioritization / Recommendation**

#### **Do these differences have the potential to cause inefficiencies?**

Only if they are applied in a manner that is inconsistent with the State handbook.

#### **Do these differences represent a significant technical difference between the two documents?**

No.

#### **Can the differences between WCDSM and TDEC regulations be reconciled with minimal impact, or will it take more significant changes to one of the regulations to reconcile?**

Yes, the two regulations could easily be reconciled. Alternatively, Williamson County could simply reference the State E&SC Handbook.

## 24. Section 24: Licensing of Septic System Installers

Section 24 of the WCDSM regulations covers the licensing of SSDS installers. The State addresses licensing of SSDS Installers in TDEC: 0400-48-01-.19.

### **Areas where the Williamson County regulations do not comply with the State minimum requirements**

No.

### **Areas where the Williamson County regulations require more than the State regulations**

The State issues annual permits to installers. WCDSM issues annual licenses and identification cards to individual installers.

- To become a State-permitted installer, one must make application and pass (>70%) a State exam. The WCDSM requires completion of a training video, meeting with department staff, a fee for license, submittal of a letter of credit (amount to be determined by WCDSM), and satisfactorily completion of a probation period made up of direct supervision by WCDSM of the first five SSDS installations.

- WCDSDM licenses (a) conventional installers, (b) alternative installers, or (c) combined installers separately. The State makes no distinction.
- The State may deny permits if the applicant performs unsatisfactory work. WCDSDM will deny a license to unqualified applicants; will suspend licenses for excessive “red flag” or “yellow flag” events; and will revoke licenses for repeatedly backfilling trenches prior to inspection, two or more suspensions in a calendar year, or insufficiently responding to a corrective review session.
- Those denied a license in Williamson County are not permitted to apply again for one year. Revoked licensees are barred from reapplying for licensure for five years. No new permits to install or inspect can be requested when a license is suspended or revoked.
- All installation, alteration, or repair of an SSDS should be under the direct installation of a licensed installer. An exception is made for property owners who must enact emergency relief measures due to sewage backing up in the residence. WCDSDM prohibits installers from subcontracting installation of an SSDS with unlicensed installers.
- For WCDSDM, failure to satisfactorily respond to deficiencies will result in a draft of the surety bond or line of credit in an amount to sufficiently correct the deficiencies.
- For denied, suspended, or revoked permits, the applicant is entitled to a hearing with the State or WCDSDM if a request for a hearing is made appropriately. Additional details on appeals, hearings, or drafts of line of credit or surety bond are found in Section 25.

#### **List of Significant Differences**

- Requirements for permitting or licensure
- Licensing based on type of system
- Surety bond or line of credit

#### **Prioritization / Recommendation**

##### **Do these differences have the potential to cause inefficiencies?**

Yes, installers need to meet the requirements for licensure that are different in Williamson County, and which are specific to the system type. Executing a draw on a surety bond or line of credit is not mentioned in the State regulations.

##### **Do these differences represent a significant technical difference between the two documents?**

No. The differences are procedural, not technical.

##### **Can the differences between WCDSDM and TDEC regulations be reconciled with minimal impact, or will it take more significant changes to one of the regulations to reconcile?**

It would take a significant effort to reconcile these regulations. There are fundamental procedural differences in the way each entity oversees and enforces licenses or permits.

## **25. Section 25: Appeal and Review of Actions**

Section 25 of the WCDSDM regulations addresses contested matters regarding installers and contested matters regarding the department. The State does not address contested matters in the septic system regulations. The State regulates contested matters in TCA 4-5-301 *et seq.*

### **Areas where the Williamson County regulations do not comply with the State minimum requirements**

The rules governing license suspension seem to be overly broad. Immediate suspension (i.e., effective immediately) to prevent the conduct of the installer from violating any provisions of department rules seems more restrictive than what is outlined in TCA 4-5-320. In that regulation, immediate suspension is limited to matters of public health, safety, or welfare.

### **Areas where the Williamson County regulations require more than the State regulations**

In a WCDSM contested case hearing, the burden of proof, by a preponderance of the evidence, is on the installer. That is not the case in TCA 4-5-301 *et seq.*

State regulations permit hearings to be conducted “virtually” or telephonically if agreed to by all parties.

There is a provision for judicial review in the State regulations. In WCDSM cases, the decision of an appeal to the Board of Health is final.

### **List of Significant Differences**

See above.

### [Prioritization / Recommendation](#)

#### **Do these differences have the potential to cause inefficiencies?**

No.

#### **Do these differences represent a significant technical difference between the two documents?**

No.

#### **Can the differences between WCDSM and TDEC regulations be reconciled with minimal impact, or will it take more significant changes to one of the regulations to reconcile?**

Since the State appeal process is regulated outside of the SSDS regulations, Williamson County would need to reconcile their regulations with the State (TCA 4-5-301 *et seq.*) It would be difficult to reconcile the regulations.

## [26. Section 26: Subdivision of Land Parcels](#)

Section 26 of the WCDSM regulations addresses the procedure for subdivisions.

The State addresses subdivisions in TDEC: 0400-48-01-.03 and 0400-48-.04.

### **Areas where the Williamson County regulations do not comply with the State minimum requirements**

None.

### **Areas where the Williamson County regulations require more than the State regulations**

Percolation testing is not permitted on parcels subject to being subdivided and platted.

TDEC permits use of general soil evaluation and high intensity soil maps for subdivisions. Since 1990, WCDSM requires the use of extra-intensity soil maps for the purposes of planning and permitting all SSDSs.

WCDSM processes plats in three steps with associated submittal deadlines and approval requirements. Each phase includes specific requirements (sketches, written documentation, soil maps, topo maps, final plats). Specific details are required at each phase. State regulations, on the other hand, require soil maps (high intensity soil map of general soil evaluation map), grid or lot staking of the lot and the soil evaluation area including percolation testing, and construction design plats. The submittals required by the State for soil evaluation mapping, grid or lot stakes, percolation test maps, and construction design plats may be combined into one submittal.

### **List of Significant Differences**

#### ***Subdivision Platting***

The sketch plan plat (a generalized design concept of the proposed subdivision) submitted for review (1 inch = 100 feet) shall illustrate proposed improvements in natural features and include written documentation from a department approved soil consultant or soil scientist regarding the suitability of SSDS usage. Upon review, WCDSM shall indicate to the Planning Commission in writing the validity of the proposed concept.

The preliminary plat (a preconstruction document illustrating lot densities, designs, and placement of the various subdivision elements including the proposed area for SSDS use) such as

- Transparency
- 1-inch equals 100 feet scale
- Lot lines, roads, drainage, easement locations, routes of any soil drainage improvement practices, building envelopes, subsurface sewage disposal system areas, utilities
- Existing structures and any limiting natural features such as sinkholes, caves, gullies, ditches ponds, etc.

Also required:

- An extra high intensity soils map shall be
  - Submitted a minimum of 15 working days prior to the preliminary plat submittal.
  - Subject to field verification and approval prior to review of the preliminary plat.
- A transparent contour map shall accompany the submitted preliminary plat. It must include:
  - Constructed from field run data
  - 1-inch equals 100 feet scale
  - All contours to 2-foot intervals
  - Proposed street configuration and lot lines

Upon review, WCDSM shall indicate to the Planning Commission in writing the validity of the proposed preliminary plat.

The final plat (the recorded instrument governing the design and construction of all subdivisions) should include all aspects of the subdivision construction. The submittal must include the following requirements:

- Two transparent copies
- Four paper copies made from the transparencies
- 1-inch equals 100 feet scale
- Elements to be shown on the final plat include easements, drainage improvements and their associated configurations, road design details, grading plans, construction design, building envelope identification, subsurface sewage disposal system areas, and all above ground and below ground utilities.

See S26-2 to S26-4 for complete list of required elements

### ***Subdivision Design***

- Percolation tests are not allowed on parcels that are to be subdivided and platted.
- Minimum lot size = 1 acre.
- Curb and gutter drainage will not be approved in subdivisions where SSDSs are used.
- Soil drainage improvement practices require each disposal field to have unrestricted access to a positive drainage outlet.
- All platted SSDS areas are to be considered permanent easements until a proper municipal sewer service becomes available.
- Soil absorption rates in excess of 75MPI shall not be considered suitable for conventional or alternative SSDSs. This seems inconsistent with regulations found elsewhere in the Williamson County regulations.
- SSDS areas should increase in size for those sites where the area proposed is complex, i.e., varying slopes or dense vegetation. This statement is vague.
- Questionable SSDS areas may require field staking to demonstrate the system can be physically installed.
- If soil mapping reveals many dissimilar soils, the conditions for soil unit having the most restrictive soil characteristics shall take precedence.
- Once the disposal fields have been delineated for a particular lot, areas shall be identified as to the type of SSDS the soil will support.
- No mixed-use of SSDS types are allowed on any lot.
- The maximum slope permitted in Williamson County is 25 percent. TDEC allows slopes of 30% and can permit slopes as high as 50% if proper soil conditions are met.
- WCDSM may restrict the following:
  - The placement and/or configuration of a building envelope
  - The placement and/or configuration of the lot's SSDS disposal field
  - The type of SSDS to be utilized
  - The number of bedrooms within a dwelling
  - The use of a structure proposed for the lot
  - The use of oversized bathing fixtures in a structure
- ***Plat Review Procedures***
  - All plats shall be submitted, and fees paid, a minimum of 21 working days prior to the scheduled Planning Commission meeting.
  - If deficiencies are found in review, a corrective review session should be scheduled. Deficiencies should be addressed, or the plats will be removed from the Planning Commission's agenda.

- Prior to the preliminary plat, the site should be surveyed and the following staked: lot boundaries, building envelope, easements, designated SSDS areas, and soil drainage improvement practices.

### ***Final Approval***

- Submit one recorded transparent and two recorded paper copies of the final plat. Field staking should be completed and verified. SSDS areas should be fenced off and inspected.

## Prioritization / Recommendation

### **Do these differences have the potential to cause inefficiencies?**

Yes, there are significant deviations from State regulations in the process, base mapping, the level of detail, and the schedule for submittals.

### **Do these differences represent a significant technical difference between the two documents?**

Yes. The use of extra high-intensity soil mapping for permitting is a significant technical difference from the State regulations, which only requires a high-intensity or general soil evaluation mapping. Limits on percolation testing is another technical difference. Subdivision platting is a procedural difference that is influenced by the Planning Commission.

### **Can the differences between WCDSM and TDEC regulations be reconciled with minimal impact, or will it take more significant changes to one of the regulations to reconcile?**

It will take significant effort to reconcile these regulations. The use of extra high-intensity soil mapping in Williamson County represents a significant difference between the regulations. The Procedure for subdivision platting is intertwined with the Planning Commission, so it would impact two county agencies.

## 27. Section 27: Approved Methods of Land Assessment

Section 27 of the WCDSM regulations addresses approved methods of land assessment.

There is no analogous section in the State regulations, but Section 3 (0400-48-01-.03) outlines permissible mapping procedures and Chapter 5 (0400-48-01-.05) summarizes percolation test procedures.

### **Areas where the Williamson County regulations do not comply with the State minimum requirements**

Soil mapping:

- WCDSM does not allow general soil mapping; it infrequently uses high intensity soil mapping, but more commonly uses extra high intensity soil mapping. Occasionally, WCDSM will specify ultra-high intensity soil mapping.

Percolation testing:

WCDSM provides very detailed procedures for percolation testing (Appendix 2). WCDSM does not permit or accept percolation tests for parcels that are (to be) platted and subdivided. Only soil mapping via extra high intensity evaluation is permitted for platted parcels.

- No percolation tests for commercial parcels.
- No percolation tests if soils are unacceptable (aquic or fragic, lacks minimum depth of 36 inches before bedrock, clay content > 50%, poorly [or somewhat poorly] drained, mottled due to wetness or a minimum of 18 inches of soil having moderate to medium subangular blocky structure with a clay content < 35% over soil having moderate to medium angular blocky structure with a clay content ranging from 35% to 50%).
- To qualify for percolation testing, a parcel must be 5 acres or larger. (TDEC requires lots of 20,000 to 25,000 sq. ft.)
- WCDSDM requires the use of their form entitled REPORT OF SOIL ABSORPTION TEST. It does not accept test results on the State form CN-0772, also titled REPORT OF SOIL ABSORPTION TEST. These two test forms are identically named, and the limitation placed on the use of the second form leaves potential for confusion.
- WCDSDM points out a number of procedural, non-technical conditions under which WCDSDM will invalidate a percolation test (lack of direct supervision, use of non-standard time notation, use of dimensions other than inches).

Other differences:

- Permissible slopes: 20% (WCDSDM) vs. 30% up to 50% (TDEC)
- Mottling: depth of 36 inches (WCDSDM) vs. 30 inches (TDEC)
- Test hole depth: 24 inches (NO MORE, NO LESS, WCDSDM) vs. 18 – 26 inches depending on the system and local conditions (TDEC)
- Test hole water level: 10 inches over gravel (WCDSDM) vs. 12 inches over gravel (TDEC)
- Testing requires 3 days' notice and can only be conducted on business days (WCDSDM)
- Testing to commence 24 hours after beginning of presoak period (WCDSDM) vs. 24 to 30 hours after beginning of presoak period (TDEC)
- Water level over gravel during test: 10 inches (WCDSDM) vs 6 inches (TDEC)
- Time to review test results: 10 to 15 working days (WCDSDM)
- WCDSDM includes requirements for County staff to enter private property.
- WCDSDM includes regulations that address expiration of land assessment documentation: 5 years for soil mapping and 3 years for percolation testing.
- WCDSDM includes regulations for reassessment of invalid or expired land assessment documentation

**Areas where the Williamson County regulations require more than the State regulations**

See above.

**List of Significant Differences**

No percolation testing for parcels subject to subdivision and platting, minimum lot size of 5 acre, and no percolation testing on commercial / industrial parcels.

[Prioritization / Recommendation](#)

**Do these differences have the potential to cause inefficiencies?**

Yes, there are a number of requirements that differ from State regulations that could invalidate the test.

**Do these differences represent a significant technical difference between the two documents?**

Yes, WCDSDM is much more detailed and failure to adhere to the procedure will invalidate the test.

**Can the differences between WCDSDM and TDEC regulations be reconciled with minimal impact, or will it take more significant changes to one of the regulations to reconcile?**

It would be difficult to reconcile the regulations.

## 28. Section 28: Vegetative Condition of a Parcel of Land

Section 28 of the WCDSDM regulations addresses vegetative condition of a parcel of land.

The State addresses vegetative control in TDEC: 0400-48-01-.03 which states, "The Commissioner may require the removal of vegetative growth such as weeds, vines and briars to permit access to all parts of the property."

**Areas where the Williamson County regulations do not comply with the State minimum requirements**

None.

**Areas where the Williamson County regulations require more than the State regulations**

WCDSDM claims "the authority to require that any parcel of land (i.e., a platted subdivision lot, individual tract of land, etc.) be cleared of all excessive vegetation when it is deemed necessary."

WCDSDM claims "the authority to determine the appropriate method for the removal of excess vegetation on any parcel of land where the use of an inappropriate method of vegetation control could destroy any soils that may have the potential to support the installation of any type of SSDs."

### List of Significant Differences

Non-specific language could be problematic ("where it is deemed necessary" or "appropriate method"). In places, the WCDSDM regulations dictate a vegetation height of not more than 3 inches. In the appendix, the height is not more than 6 inches. This could cause confusion.

### Prioritization / Recommendation

**Do these differences have the potential to cause inefficiencies?**

Yes, they could cause slight inefficiencies, but they should not cause inefficiencies if reasonable people are involved.

**Do these differences represent a significant technical difference between the two documents?**

No.

**Can the differences between WCDSDM and TDEC regulations be reconciled with minimal impact, or will it take more significant changes to one of the regulations to reconcile?**

The differences could be easily reconciled by cleaning up language and specifying necessary requirements in the WCDSDM regulations.



## 29. Section 29: Establishment of Ground Control

Section 29 of the WCDSDM regulations addresses establishment of ground control, which is defined as “the placement or establishment of obvious and clearly visible landmarks (such as survey stakes, surveyors flagging tape, etc.) upon a land parcel so as to identify the presence of man-made boundaries.”

The State does not address ground control in TDEC: 0400-48-01.

### **Areas where the Williamson County regulations do not comply with the State minimum requirements**

None.

### **Areas where the Williamson County regulations require more than the State regulations**

- WCDSDM claims “the authority to require that any and/or all boundaries and/or any platted features of a property or parcel of land be clearly and visibly marked *by a registered land surveyor* when and where it is deemed necessary.”
- WCDSDM claims “the authority to require the preparation of a survey plat document by a surveyor where the need for said documentation is deemed necessary to conduct business of the department.”
- WCDSDM “requires that the placement or establishment of obvious and clearly visible landmarks such as survey stakes surveyors flagging tape, etc., upon a land parcel or the preparation of plant documents *be conducted by registered land surveyors.*”

### **List of Significant Differences**

The open-endedness of the language in this section (“The department claims the authority to require...when and where it is deemed necessary”) is imprecise.

### **Prioritization / Recommendation**

#### **Do these differences have the potential to cause inefficiencies?**

It could if survey work is required in unanticipated ways.

#### **Do these differences represent a significant technical difference between the two documents?**

No.

#### **Can the differences between WCDSDM and TDEC regulations be reconciled with minimal impact, or will it take more significant changes to one of the regulations to reconcile?**

The State would have to pass similar requirements, or WCDSDM would need to rescind Section 29, to reconcile the two documents.

## 30. Section 30: Domestic Septage Disposal

Section 30 of the WCDSDM regulations covers Domestic Septage Disposal.

The State addresses domestic septage disposal in TDEC: 0400-48-01-.22.

### **Areas where the Williamson County regulations do not comply with the State minimum requirements**

The Williamson County Board of Health has banned the land application of septage. The State will still permit land application if permission to dispose of septage in a wastewater treatment plant (WWTP) cannot be obtained.

**Areas where the Williamson County regulations require more than the State regulations**

None.

**List of Significant Differences**

The significant difference is that Williamson County does not permit land application of septage.

[Prioritization / Recommendation](#)

**Do these differences have the potential to cause inefficiencies?**

The ban on land application in Williamson County requires disposal in a WWTP or hauling septage out of the county for disposal. Both could lead to higher disposal costs.

**Do these differences represent a significant technical difference between the two documents?**

Yes, the significant difference is that the disposal options in the County are limited.

**Can the differences between WCDSM and TDEC regulations be reconciled with minimal impact, or will it take more significant changes to one of the regulations to reconcile?**

A significant change would have to be made; the Williamson County Board of Health would need to lift its ban on land application of septage in order to reconcile the two documents.

## 31. [Section 31: Pump and Haul of Holding Tanks](#)

Section 31 of the WCDSM regulations regulates pump and haul of holding tanks.

The State does not address holding tanks or pump and haul practices in TDEC: 0400-48-01.

**Areas where the Williamson County regulations do not comply with the State minimum requirements**

None.

**Areas where the Williamson County regulations require more than the State regulations**

Since there is no analogous section in the State regulations, the WCDSM regulation requires more than the State regulations.

**List of Significant Differences**

- WCDSM limits the use of pumping haul systems in new sources to residential or nonresidential property owners (a) when public sewers will become available within 12 months from the date of the execution of the pump and haul agreement or (b) when a property owner has a permit to construct a SSDS but due to unforeseen delays, the system is not completed in the time frame anticipated (limited to 90 days).

- Pump and hall may also be approved in existing sources on properties with failing or malfunctioning septic systems, or on properties where sewer will become available within 12 months.
- Applicants must execute a contract with a sewage hauling company stipulating that the tanks are emptied on a regular basis, the waste is transported to a WWTP, a representative will be always present when waste is being transferred, and that any spills will be promptly cleaned up by the pumper.
- Application for pump and hall includes (a) the site may be inspected by WCDSDM, (b) plans for the holding tank must be reviewed and approved by WCDSDM, and (c) the applicant must provide a letter from a utility guaranteeing sewage collection and treatment within 12 months.
- The following minimum requirements should be completed by an engineer for a pump and hall system:
  - Tank shall be sized to accommodate a minimum of four days flow.
  - Tank must be equipped with a high-level alarm and light that will be activated when no less than one day's capacity is remaining.
  - A level gauge is required.
  - If the tank is below ground a riser to ground level shall be provided to facilitate pumping.
  - The tank must be constructed of durable materials and be ventilated.
  - Tanks shall be covered for vector control and safety.
  - Tank location shall be subject to approval by the department.
  - An all-weather access road must be provided to the holding tank.
- Operating reports shall be maintained for each site and submitted monthly to WCDSDM. Any spills shall be cleaned up and treated with lime. No land spreading of pump and haul system waste shall be allowed. Pump and haul systems shall be retired within 30 days of sewer availability.

### Prioritization / Recommendation

#### **Do these differences have the potential to cause inefficiencies?**

The regulations seem reasonable. Timeframes may be a challenge for some, especially the requirement for an all-weather access road.

#### **Do these differences represent a significant technical difference between the two documents?**

Since there are no regulations on pump and haul in 0400-48-01, WCDSDM requirements have significant limitations on when pump and haul can be used and on how the system should be constructed.

#### **Can the differences between WCDSDM and TDEC regulations be reconciled with minimal impact, or will it take more significant changes to one of the regulations to reconcile?**

If there are not rules governing pump and haul systems elsewhere in the State regulations (not included in the regulations on septic systems, 0400-48-01), the State would have to pass similar requirements, or WCDSDM would need to rescind Section 32, to reconcile the two documents. This would be a significant effort.

## 32. Section 32: Abandonment of Tanks

Section 32 of the WCDSM regulations lays out requirements for abandoning subsurface tanks.

The State does not address abandoning tanks in TDEC: 0400-48-01.

### **Areas where the Williamson County regulations do not comply with the State minimum requirements**

None.

### **Areas where the Williamson County regulations require more than the State regulations**

Since there is no analogous section in the State regulations, the WCDSM regulation require more than the State regulations.

### **List of Significant Differences**

Prior to abandonment, tank(s) should be pumped, and the contents properly disposed.

Three methods are approved: (a) collapsed and buried in place, (b) removed and hauled for disposal, or (c) filled with gravel, concrete, or other approved material.

Abandonment must be approved by WCDSM prior to covering the tank.

### **Prioritization / Recommendation**

#### **Do these differences have the potential to cause inefficiencies?**

There is potential to cause inefficiencies, but this issue does not seem like a significant target.

#### **Do these differences represent a significant technical difference between the two documents?**

No.

#### **Can the differences between WCDSM and TDEC regulations be reconciled with minimal impact, or will it take more significant changes to one of the regulations to reconcile?**

If there are not rules governing abandoning tanks elsewhere in the State regulations (not included in the regulations on septic systems), the State would have to pass similar requirements, or WCDSM would need to rescind Chapter 32, to reconcile the two documents. This would be a significant effort if this were desired.

## 33. Section 33: Fees for Department Services

Section 33 of the WCDSM regulations addresses fees for department services. Fees are set by the Williamson County Board of Health and are available in WCDSM offices.

The State addresses fees in TDEC: 0400-48-01-.21. Fees for service we last updated in 2014.

### **Areas where the Williamson County regulations do not comply with the State minimum requirements**

No.

### **Areas where the Williamson County regulations require more than the State regulations**

None are apparent. Fee schedule is not included in the WCDSDM regulations.

#### **List of Significant Differences**

N/A

#### [Prioritization / Recommendation](#)

**Do these differences have the potential to cause inefficiencies?**

No.

**Do these differences represent a significant technical difference between the two documents?**

No.

**Can the differences between WCDSDM and TDEC regulations be reconciled with minimal impact, or will it take more significant changes to one of the regulations to reconcile?**

Costs are set by the Board of Health and changes would need to be approved by the Board. WCDSDM costs are likely more current than the State fees. To reconcile the fees, the State would most likely have to update their fee schedule.

### [34. Section 34: Repair or Modification of SSDSs](#)

Section 34 of the WCDSDM regulations regulates repair and modification of SSDSs.

The State briefly addresses repair and modification of SSDSs in TDEC: 0400-48-13: "Should the system malfunction, the Commissioner shall issue, in writing a maximum thirty (30) day notice to the owner requiring repair, replacement or improvement of the system."

**Areas where the Williamson County regulations do not comply with the State minimum requirements**

None.

**Areas where the Williamson County regulations require more than the State regulations**

The WCDSDM regulations are more proscribed than the State regulations.

#### **List of Significant Differences**

WCDSDM claims authority to "investigate repairs or replacements, assess the condition and the natural conditions, and stipulate the course of action to ensure proper function of the SSDS. WCDSDM claims authority to determine the extent of any SSDS replacement."

#### [Prioritization / Recommendation](#)

**Do these differences have the potential to cause inefficiencies?**

Repairs are dictated by WCDSDM and may include a requirement to replace the system.

**Do these differences represent a significant technical difference between the two documents?**

No.

**Can the differences between WCDSDM and TDEC regulations be reconciled with minimal impact, or will it take more significant changes to one of the regulations to reconcile?**

It would not take significant changes to one of the regulations (State or WCDSDM) to reconcile the two. While more proscribed than the State regulations, there is not much difference between the two.

### 35. Section 35: Recertification of SSDs

Section 35 of the WCDSDM regulations is reserved for regulations dealing with recertification of SSDs. There are no WCDSDM regulations currently published on this topic.

The State does not address recertification in TDEC: 0400-48-01.

**Areas where the Williamson County regulations do not comply with the State minimum requirements**

N/A

**Areas where the Williamson County regulations require more than the State regulations**

N/A

**List of Significant Differences**

N/A

#### Prioritization / Recommendation

**Do these differences have the potential to cause inefficiencies?**

N/A

**Do these differences represent a significant technical difference between the two documents?**

N/A

**Can the differences between WCDSDM and TDEC regulations be reconciled with minimal impact, or will it take more significant changes to one of the regulations to reconcile?**

N/A

### 36. Section 36: Water Conservation and Best Management Practices

Section 36 of the WCDSDM regulations addresses required and encouraged water conservations and best management practices (BMPs) in commercial and non-residential installations only. Section 36 also covers application requirements for new non-residential facilities and existing facilities that may be converting from a residential to commercial operation.

The State does not address these topics in the regulations.

**Areas where the Williamson County regulations do not comply with the State minimum requirements**

None.

**Areas where the Williamson County regulations require more than the State regulations**

These issues are not covered in 0400-48-01.

### **List of Significant Differences**

- The following BMPs are required: Low flow plumbing fixtures, air hand dryers, grease interceptor tank, grease dumpster, in-sink garbage disposal, drain screens, written BMP program/policy, prevention of harmful chemical disposal, special filters, screens, and/or tanks/interceptors/traps.
- The following BMPs are encouraged: high efficiency plumbing fixtures, pressure assisted or vacuum assisted plumbing fixtures, automatic plumbing fixtures, innovative and emerging plumbing fixtures and plumbing fixture technologies, grease trap and or automatic grease removal device, use of outside caterers, use of disposable dishes and flatware, limited self-service items, implementation of miscellaneous BMPs, consideration of types and proper use of sanitizers, disinfectants, and cleaning agents, elimination of clear water drains, elimination of floor drains, elimination of public restrooms, elimination of septic tank additives, and elimination water treatment devices.
- For changes of use when a property goes from commercial to an alternate commercial enterprise, the owner or applicant of the facility shall submit a new operating permit application for the change of use. WCDSDM will approve or deny the application. Denial can be based on regulatory requirements water conservation practices and BMP requirements, or it may be discovered that there will be loading changes or new adverse impacts to the existing system.
- For changes when a property converts from residential to commercial use, the facility will be required to comply with water conservation and BMP requirements and submit a new operation permit application for the changes along with an affidavit.

### **Prioritization / Recommendation**

#### **Do these differences have the potential to cause inefficiencies?**

These requirements may cause inefficiencies when a commercial operation changes and the property is sold.

#### **Do these differences represent a significant technical difference between the two documents?**

No.

#### **Can the differences between WCDSDM and TDEC regulations be reconciled with minimal impact, or will it take more significant changes to one of the regulations to reconcile?**

There are no regulations in 0400-48-01 that deal with water conservations and BMPs. Reviewing building codes or other State regulations is beyond the scope of this project, so it unknown how significant the effort would be to reconcile these.