

TITLE 410 INDIANA DEPARTMENT OF HEALTH**Regulatory Analysis**

LSA Document #26-64

I. Description of Rule**a. History and Background of the Rule**

The Indiana Board of Health adopted the first administrative rule regulating the disposition of sewage and excremental matter at private residences beyond the reach of sanitary sewer in 1977 with HSE 25, codified in 1978 as Rule [410 IAC 6-8](#). This rule gave local health departments powers of enforcement in public health matters related to on-site sewage disposal, provided minimum requirements for the conventional subsurface trench gravity flow septic system, and prohibited the discharge of untreated or partially treated sewage. The Indiana State Department of Health replaced this rule in 1990 with Rule [410 IAC 6-8.1](#). The new rule provided minimum requirements for five types of “conventional” septic systems and made technical updates and requirements for soil evaluations and soil loading rates, subsurface drainage, technologies new to Indiana, and permit issuance by the local health department. In January of 2011, Rule [410 IAC 6-8.1](#) was updated and revised to Rule [410 IAC 6-8.2](#) which included construction and operating permits, requirements for outlet filters, and requirements for abandonment of systems. Rule [410 IAC 6-8.2](#) was replaced with Rule [410 IAC 6-8.3](#) in 2012, with slight revisions in 2013 and 2014. In 2024 Rule [410 IAC 6-8.3](#) was again updated in order to comply with [IC 16-19-3-27.7](#). During the 2025 legislative session, Section 4 of HEA 1052 added [IC 16-19-3-34](#) requiring IDOH to update these rules by July 1, 2026. It is also prompted by statutory changes which have voided local on-site sewage system ordinances that vary from this rule ([IC 16-19-3-27.8](#) and [IC 16-41-25-7](#)) as of July 1, 2023. [IC 16-19-3-27.7](#) requires that all matters incorporated by reference and all industry standard practices reflected in the rules be updated by IDOH with approval from the Technical Review Panel. Currently, there are 23 local health departments that have local on-site sewage system ordinances approved by the Technical Review Panel, and many of those ordinances include several things proposed to be included in this rule revision.

The Technical Review Panel, comprised of representatives from the regulated industry, has reviewed and approved the proposed rule and in general this regulatory analysis at public meetings.

b. Scope of the Rule

IDOH is proposing to revise this rule for many reasons.

- 1) To update the rule in accordance with statutory changes since the last rule update.
- 2) To eliminate the need for local health departments to have lengthy on-site sewage system ordinances which include those things that should be implemented throughout the state. This will provide more consistency statewide.
- 3) To include new definitions and update existing definitions, as approved by the IDOH Technical Review Panel, for clarity and consistency.

- 4) To update all matters incorporated by reference in the rule including standards and specifications and industry standard practices reflected in the rule in accordance with [IC 16-19-3-27.7](#).
- 5) To provide minimum requirements for inspection of residential on-site sewage systems for use of best judgment and for connection or reconnection to existing on-site sewage systems as requested by the Indiana Legislature and the Technical Review Panel.
- 6) To remove repetitive sections from the rule and replace them with defined terminology for clarity.
- 7) To require all on-site sewage system installers to register with local health departments where they install residential on-site sewage systems and to allow local health departments to certify installers if there is a need.
- 8) To have specific requirements for sewage holding tanks to further clarify [IC 16-41-25-9](#).
- 9) To address high strength waste which contributes to the failure of a residential on-site sewage system.
- 10) To allow alternate on-site sewage system sizing options for tiny homes and recreational vehicles.

c. Statement of Need

[IC 16-19-3-34](#) requires IDOH to update these rules by July 1, 2026. It is needed to comply with statutory changes made since the last rule update and to address the intentions of the Technical Review Panel. [IC 16-19-3-27.8](#) introduced a way for local health departments to have local on-site sewage system ordinances readopted locally and approved by the Technical Review Panel. After many months of reviewing local ordinance submissions, the Technical Review Panel has determined that there are many requirements being put into local ordinances that should be implemented statewide and should be incorporated into the rule. Currently, the Technical Review Panel has approved twenty-three local on-site sewage system ordinances. Each local ordinance is slightly different, but many have similar requirements as to what is being proposed in this rule revision. This rule revision will bring consistency throughout the state in the way residential on-site sewage systems are regulated and be reflective of the industry's current best practices.

d. Statutory Authority for the Proposed Rule

Under [IC 16-19-3-4](#), the Executive Board of the Indiana Department of Health (IDOH) has the authority to adopt rules in order to protect or improve public health in the state, including rules concerning the disposition of excremental and sewage matter through the design, installation, construction, maintenance, and operation of residential on-site sewage systems. Under [IC 16-19-3-1](#), IDOH possesses all powers necessary to fulfill the duties prescribed in statute and for the enforcement of any of the provisions of health laws and rules. In 2019, the Indiana Legislature created the Technical Review Panel which is required to assist the Executive Board with adopting rules for on-site sewage systems. The Technical Review Panel make-up is set through [IC 16-19-3-27.5](#), including governor appointments, and represents the various members of the on-site sewage system industry.

e. Fees, Fines, and Civil Penalties

This rule does not add or increase any fees, fines, or civil penalties.

II. Fiscal Impact Analysis

a. Anticipated Effective Date of the Rule

The anticipated effective date of the rule is July 1, 2026.

b. Estimated Fiscal Impact on State and Local Government

This rule does not make any changes to the state administration of the on-site sewage system program within IDOH, so there are no costs to IDOH. This rule does not affect any other part of state government, so it does not add any expenses. This rule revision will add no expenses to local government.

c. Sources of Expenditures or Revenues Affected by the Rule

Not applicable to this rule.

III. Impacted Parties

Impacted Parties include:

- Homeowners who utilize on-site sewage systems - approx. 7244/year
- On-site sewage system installers - approx. 750
- On-site sewage system designers - approx. 50
- Soil scientists - approx. 47

IV. Changes in Proposed Rule

Any rule section marked with an asterisk (*) has been revised or added for technical accuracy or in response to public comments.

Rule Section	Change	Purpose	Reason for the Change
5.1	Adds “base flood elevation” definition	Clarification	This updates to current language replacing “regulatory flood elevation.”
7.1*	Adds “best judgment” definition	Clarification	Clarifies the process for local health departments to use when a “best judgment” is used to allow systems that cannot meet the standards of the rule. This is already in the rule, but the definition is to clarify meaning

			throughout the rule.
7.2	Adds "Cesspool" definition	Clarification	Clarifies what a cesspool is. The rule states later that a cesspool is not an approved means of sewage disposal.
8.1	Adds "construction, new" definition	Clarification	Clarifies the difference between new construction and repair/replacement construction for use of best judgment and issuance of construction permits.
8.2*	Adds "construction, repair/replacement" definition	Clarification	Clarifies the difference between new construction and repair/replacement construction for issuance of construction permits.
12*	Amends "design daily flow" definition	Clarification	Provides alternative sizing requirements for tiny houses and recreational vehicles connected to a residential on-

			site sewage system, a benefit to homeowners using these types of dwellings.
12.1	Adds "designer" definition	Clarification	Designates that the one who submits a design as part of an application for a residential on-site sewage system is the designer.
14*	Amends "drainageway" definition	Clarification	Changed pursuant to the Technical Review Panel for clarity.
14.1	Adds "drywell" definition	Clarification	Clarifies what a drywell is. The rule states later that a drywell is not an approved means of sewage disposal.
16.1*	Adds 'fixed reference point" definition	Clarification	Clarifies what a fixed reference point is to assist in designing a residential on-site sewage system.
17.1	Adds "fragic soil properties" definition	Clarification	Added per Technical Review Panel request.
17.2	Adds "fragipan" definition	Clarification	Added per Technical Review Panel request.
18*	Amended "health officer" definition	Clarification	Changed to include the representative

			of health and hospital corporations
18.1	Adds "high strength waste" definition	Clarification	Defines characteristics of wastewater that a residential on-site sewage system is not capable of treating.
18.2	Adds "IAPMO" definition	Clarification	Provides a definition for this entity whose standards are included in the rule.
19.1	Adds "inspector" definition	Clarification	Defines who can inspect a residential on-site sewage system under parameters included in the rule.
19.2	Adds "installer" definition	Clarification	Clarifies what kind of work an installer can perform.
20	Amends "interceptor drain" definition	Clarification	Clarifies purpose of an interceptor drain.
20.1	Adds "involuntary" definition	Clarification	Distinguishes voluntary from involuntary in regards to what best judgment may be used for and clarifies new vs

			repair/replacement permits.
20.2*	Adds "limiting layer" definition	Clarification	Removes extensive verbiage that was in the rule in 4 different places and replaces those sections with this term.
27	Amends "perimeter drain" definition	Clarification	Clarifies purpose of a perimeter drain.
30	Repeals "regulatory flood elevation" definition	Clarification	Replaced with current definition of "base flood elevation" in section 5.1.
30.1	Adds "recreational vehicle" definition	Clarification	Defines what is considered to be a recreational vehicle as we now are providing smaller sizing requirements for these types of homes; a benefit to homeowners.
32*	Amends "residential on-site sewage system" definition	Clarification	Clarifies additional components which are considered part of a residential on-site sewage system.
32.1*	Adds "residential on-site sewage system expansion" definition	Clarification	Clarifies what is meant by an expansion to an on-site sewage system.

33*	Amends "residential on-site sewage system failure" definition	Clarification	Clarifies additional situations which are included in the definition of failure and specifies that it is a <i>public</i> health hazard.
33*	Amends "residential on-site sewage system failure" definition	Clarification	Clarifies and expands what an on-site sewage system failure is.
33.1*	Adds "residential on-site sewage malfunction" definition	Clarification	Defines this term which was already used in section 55 of the rule.
33.2*	Adds "residential on-site sewage system repair" definition.	Clarification	Clarifies what is meant by a repair to an on-site sewage system.
33.3*	Adds "residential on-site sewage system replacement" definition.	Clarification	Clarifies what is meant by a replacement to an on-site sewage system.
35.1	Adds "responsible charge of installers" definition.	Clarification	Clarifies who is responsible for the installation of an on-site sewage system at the job site.
35.2*	Adds "secondary safety device" definition.	Clarification	Clarifies what constitutes a secondary safety device.
39	Amends "segment drain" definition	Clarification	Adds an additional function to a

			segment drain which all other subsurface drainage already has.
41.1*	Adds "sewage holding tank" definition	Clarification	Clarifies what a sewage holding tank is as it is used in the rule.
41.2*	Adds "soil" definition	Clarification	Clarifies what soil is as it is used in this rule.
43*	Amends "soil absorption system" definition	Clarification	Clarifies additional components which are considered part of a soil absorption system.
43.1	Adds "soil boring" definition	Clarification	Clarifies what a soil boring is and what it is used for when evaluating soil.
44*	Amends "soil horizon" definition	Clarification	Adds three components of soil structure and percentage of coarse fragments in each horizon that must be included on the soil profile report required by the rule. There is no additional cost as soil scientists regularly do this already.

45*	Amends "soil loading rate" definition	Clarification	Removes "allowable" from the definition indicating that this is just the rate. This also specifies that it is expressed in US gallons that may be applied per square foot of soil.
45.1	Adds "soil pit" definition	Clarification	Clarifies what a soil pit is as opposed to a soil boring and clarifies what it is used for when evaluating soil.
46*	Amends "soil profile analysis" definition	Clarification	Add "chemical and biological" characteristics to what the soil scientist describes. This also changes the depth of evaluation, if less than 5 feet, to the depth of the limiting layer.
49	Amends "subsurface drainage system" definition	Clarification	Clarifies that the subsurface drainage system does both items listed and that sand rather than coarse sand can be used as backfill.

50	Amends "technology new to Indiana" definition	Clarification	Clarifies that technology new to Indiana is now approved pursuant to IC 16-19-3-27.5 rather than solely by IDOH.
50.1	Adds "temporary benchmark" definition	Clarification	Defines a location with an elevation that is used to adequately locate the area of the soil absorption field installation.
50.2	Adds "tiny house" definition	Clarification	Defines what is considered to be a tiny home as we now are providing smaller sizing requirements for these types of homes; a benefit to homeowners.
50.3*	Adds "upgraded piping" definition	Clarification	Removes text repeated multiple times in the rule with a defined term.
50.4	Adds "watertight" definition	Clarification	Defines what the rule refers to as a watertight structure.
50.5*	Adds "voluntary" definition	Clarification	Distinguishes voluntary from involuntary in regard to what

			best judgment may be used for and clarifies new vs repair/replacement permits.
51(a)	Administrative Authority	Clarification	Replaces "the local board of health" with "a local health department" to include health and hospital corporations
51(e)*	Administrative Authority	Clarification	Clarifies that residential onsite sewage discharging disposal systems are not regulated by this rule and that those systems may be used if all of the requirements of statute are met.
52(b)	General sewage disposal requirements	Allows local health departments options for dealing with on-site sewage system failures.	Adds that a local health department <i>may</i> require connection to sewer if an on-site sewage system fails and if sanitary sewer is available within 300' of the property line and is within 150% of the cost of installing a replacement on-

			site sewage system. Further discussion below.
52(e)	General sewage disposal requirements	Expansion of options for homeowners	Expands what a dwelling not connected to sewer can use for sewage disposal. Provides increased options for homeowners.
52(f)	General sewage disposal requirements	Clarification	Clarifies that a cesspool and a drywell are not acceptable means of sewage disposal.
Former 52(e)	General sewage disposal requirements	Relocation of requirements for holding tanks to separate section and expands their use.	Removes temporary holding tanks from this section which is replaced with section 62.1.
52(g)	General sewage disposal requirements	Clarification	Replaces "the local board of health" with "a local health department" to include health and hospital corporations
52(h)	General sewage disposal requirements	Clarification	Clarifies that technology new to Indiana is now approved pursuant to IC 16-19-3-27.5

			rather than solely by IDOH.
52(i)	General sewage disposal requirements	Clarification	Includes allowance for a declaration of on-site sewage system easement if both properties are owned by the same person.
52(i)*	General sewage disposal requirements	Clarification	Holding tanks and sanitary vault privies that are not on the property where sewage originates must have an easement or a declaration of an easement for the property on which they are placed.
52(l)*	General sewage disposal requirements	Clarification	Clarifies what is required for a dwelling to connect or reconnect to an existing on-site sewage system.
52.1*	Adds professional standards	Addition	Allows for registration, which may include certification, of installers by local health departments or the Indiana Onsite Wastewater

			Professionals Association.
53(a) (7) and (9)	Construction permits	Clarification	Clarifies that a construction permit is needed prior to installing any component of a residential on-site sewage system and for system abandonment.
53(d)*	Construction permits	Clarification	Outlines what a complete application consists of and what is required to be submitted as part of the application. Requires at least one fixed reference point.
53(g)*	Construction permits	Clarification and expansion of entries that may approve a construction plan.	This clarifies that a complete application must be submitted before the 30-day time period for plan review begins. It also adds reference to 3 statutes that allow for other means of plan approval.
53(h)	Construction permits	Clarification	Amends verbiage per Technical Review Panel.

53(i)	Construction permits	Expansion of best judgment considerations	Expands what the local health department must consider in order to issue a construction permit under best judgment circumstances.
53(j)	Construction permits	Allows LHDs to deal with high strength waste that has caused a failure.	The local health department <i>may</i> require the addition of an aerobic treatment unit to a system which has failed due to high strength waste. They may also allow the owner to create a plan to reduce waste strength.
53(l)*	Construction permits	Clarification	Clarifies that if a local health department has different requirements for final inspection, those must be included in an ordinance approved per IC 16-19-3-27.8 and that no portions of any system may be covered prior to

			the time limit for final inspections.
53(m)	Construction permits	Clarification	Amended when the on-site sewage system permit conditions are considered fulfilled.
54*	Operating permits	Expands operating permit options	Local health departments <i>may</i> require operating permits on any type of system listed and must issue operating permits for sewage holding tanks. Expands components included and provides for revocation of permits not in compliance.
54.1*	Requirements for inspection of existing on-site sewage systems	Clarification	Outlines what must be observed/evaluated and documented as part of an inspection that is already required by the rule.
55(d)	Violations; permit denial and revocation	Clarification	Replaces "the local board of health" with "a local health department" to include health and

			hospital corporations
56	On-site soil evaluation	Clarification	Adds "soil" to the section title for clarity.
56(b)	On-site evaluation	Clarification	Clarifies that the soil scientist must be a <i>registered professional</i> with IRSS as opposed to a registered associate.
56(c)	On-site evaluation	Clarification	Requires a minimum of three soil profiles descriptions be provided for each on-site soil evaluation for on- site sewage system.
56(d) (2)*	On-site evaluation	Clarification	Specifies that if a soil evaluation is not done to a depth of 5 feet, it at least has to be as deep as the limiting layer.
56(e)*	On-site evaluation	Clarification	Change of "shall" to "must."
56(f)*	On-site evaluation	Addition	Requires all soil evaluation sites to be located in relation to two fixed reference points, when

			possible, but states 1 fixed point is always required. They were already required to be located, just not from anything in particular.
56(g)	On-site evaluation	Clarification	Changed "subsection" to "subdivision" in reference to this rule.
56(h)	On-site evaluation	Clarification	Requires certified soil scientists to sign the report and submit it directly to the local health department if it is to be used to obtain a construction permit.
57(a)*	Separation distances	Additions	Adds separation distances to sewage holding tanks, subsurface cisterns, and perennial or intermittent streams.
57(a)*	Separation distances	Additions	Adds a separation to a sinkhole and a footnote with a reference to a

			definition in statute.
57(d) and (e)	Separation distances	Clarification	Uses “upgraded piping” (as now defined) in place of complete verbiage. No change in regulation.
58(a)	Dispersal Area	Clarification	Uses "a restrictive limiting layer" (as now defined) in place of complete verbiage. No change in regulation
58(c)*	Dispersal Area	Clarification	Two instances of “shall” have been changed to “must.”
59(h)	Drainage	Clarification	Added that the drainline should be installed with no high points in the line.
59(n)*	Drainage	Clarification	One “shall” was changed to “must” and “utilized” was changed to “used” for easier comprehension.
60(a)	Septic tanks: general requirements	Updated industry verbiage	Updates septic tank construction materials to match that of IAPMO Z1000.
60(h)	Septic tanks: general	Update standard	Updates standards as required in

	requirements		Indiana Code.
61(j)	Septic tanks: construction details	Clarification	Clarifies requirements for structural strength for concrete as added by Technical Review Panel.
61(n)	Septic tanks: construction details	Clarification	Specifies standard for type III fibers used in concrete tanks.
61(p) and (q)	Septic tanks: construction details	Update standard	Updates standards as required in Indiana Code.
62(a)	Dosing tanks	Updated standard	Updates dosing tank construction materials to match that of IAPMO Z1000.
62(c)	Dosing tanks	Clarification	Clarifies requirements for structural strength for concrete as added by Technical Review Panel.
Former 62(e)	Septic tanks and dosing tanks: installation and maintenance	Repealed	Removes requirement for the top of septic tank and dosing tank risers to be above the regulatory flood elevation (RFE).
62(g)	Dosing tanks	Updated standard	Updates standards as required in Indiana Code.

62.1*	Sewage holding tanks	Addition	Replaces former section 52(e). Includes additional requirements to what Indiana Code allows, including minimum sizing requirements.
63*	Septic tanks and dosing tanks: installation and maintenance	Clarification	Adds requirements for sewage holding tanks to be the same as for existing requirements for septic and dosing tanks and updates standards as required in I.C.
63(c) (7)	Septic tanks and dosing tanks: installation and maintenance	Clarification	This section previously required a "plug" in compliance with the statute reference. The statute is still referenced, but we have added the industry standard name, secondary safety device, both as a definition and here. This does not change the requirement.
63(f)*	Septic tanks and dosing tanks:	Addition	Requires buoyancy control on tanks when

	installation and maintenance		recommended by the tank manufacturer.
64*	Outlet filters	Updated standard	Updates standards as required in Indiana Code.
65	Effluent pumps	Adds options; updates standard	Updates standards as required in Indiana Code.
66(b)	Distribution box specifications	Clarification	Clarifies that the material used to construct a distribution box must be watertight.
66(d)	Distribution box specifications	Addition	Requires any newly installed distribution box that is installed below final grade and uses only one outlet to discharge to a soil absorption field to have a riser to final grade and riser joints to be watertight.
66(e)*	Distribution box specifications	Clarification	Requires distribution boxes to be stabilized during installation to prevent movement.
66(g)	Distribution box specifications	Clarification	Changes "weep hole" to "vent hole"

66(h)*	Distribution box specifications	Clarification	"Shall" was changed to "must" twice. "As follows:" was included for better understanding. "The" was removed and "a" was added for better understanding.
67	Pipe specifications	Updated standards	Updates standards as required in Indiana Code and replaces verbiage with the term "upgraded piping".
68	Aggregate specifications	Updated standard	Updates standards as required in Indiana Code.
69	Barrier materials	Updated standard	Updates standards as required in Indiana Code.
70(b) (6)-(7)	Subsurface trench on-site sewage system site suitability	Use of defined terminology	Replaces text with defined term.
70(b) (7)* Table IV	Subsurface trench on-site sewage system site suitability	Addition	Added reference to IC 16-41-25-1 , which allows a soil scientist to determine that fill soil is suitable for installation of an on-site sewage system.

70(c) (5)(B)*	Subsurface trench on-site sewage system site suitability	Addition	Added reference to IC 16-41-25-6 , which allows a soil scientist to certify that compacted soil may be made suitable.
71*	Subsurface trench on-site sewage system type selection criteria	Use of defined terminology	Replaces text with defined term three times. Corrects reference to "linear feet".
72(b) (5)-(6)	Elevated and mound on-site sewage system site suitability	Use of defined terminology	Replaces text with defined term.
72(b) (6)* Table V	Elevated sand mound on-site sewage system site suitability	Addition	Added reference to IC 16-41-25-1 , which allows a soil scientist to determine that fill soil is suitable for installation of an on-site sewage system.
72(c) (5)(B)*	Elevated sand mound on-site sewage system site suitability	Addition	Added reference to IC 16-41-25-6 , which allows a soil scientist to certify that compacted soil may be made suitable.
73*	Table for an on-site sewage system selection	Corrections	Corrects two vertical separation distances to

			coincide with section 71(b).
74(a)*	Subsurface trench on-site sewage system: general design and construction requirements	Updated	Allows for sizing of the soil absorption field based upon design daily flow (updated definition) for tiny houses and recreational vehicles; a benefit to homeowners.
74(b)	Subsurface trench on-site sewage system: general design and construction requirements	Addition	Requires the area of the soil absorption field to be protected from disturbance (similar to what is already required for elevated sand mounds). A local health department may require a site visit and components of the system to be marked at the site.
79(a)	Elevated sand mound on-site sewage systems: design of the aggregate bed	Updated	Allows for sizing of the soil absorption field based upon design daily flow (updated definition) for tiny houses and recreational vehicles; a benefit to homeowners.

80(c)	Elevated sand mound on-site sewage systems: design of basal area	Updated	Allows for sizing of the soil absorption field based upon design daily flow (updated definition) for tiny houses and recreational vehicles; a benefit to homeowners.
81(c)	Elevated sand mound on-site sewage system: dimensions of the elevated sand mound	Clarification	Changed reference due to other rule changes.
90(a)	Abandonment of an on-site sewage system	Clarification	Requires a permit to be issued and an inspection be completed by the local health department for system abandonment.
90(b)*	Abandonment of an on-site sewage system	Clarification	Clarifies requirements for abandonment of tanks and electrical service.
90(c)	Abandonment of an on-site sewage system	Clarification	Clarifies requirements for a soil absorption field left in place.
90(e)	Abandonment of an on-site sewage system	Update and Clarification	Clarifies requirements for abandonment of

			soil absorption fields and allows use of aggregate, sand and soil cover to be used as fill material as opposed to being required to be taken to a licensed landfill - a benefit to the customer
90(f)	Abandonment of an on-site sewage system	Clarification	Clarifies requirements for receipt submittal.
91*	Matters incorporated by reference	Updated standards	Does not affect cost because the updated standards are addressed in other updated sections.

V. Benefit Analysis

Many of the updated requirements proposed in this rule will have the initial cost offset by future homeowner savings with reduced maintenance intervals; built-in safety factors aimed at providing a safe, secure system for both the homeowner and the service provider; and on-site systems that will be better designed, sited, installed, and managed with a goal of increased longevity and fewer system failures. The soil scientist's site and soil evaluation are the first steps to designing, permitting, and installing a system best suited for the unique characteristics of each site. Thorough and accurate evaluation and description of the soils at the site is a critical aspect of system function and longevity. On-site sewage systems will last many years with proper operation and maintenance. Easy access to distribution boxes can provide a simple way to assess system performance, assist in locating problems, and allow for easier maintenance activities.

Many of the items proposed in this rule stem from years of observation, collaboration, and advancements in technologies in the field of on-site sewage systems, combining the years of experience of soil scientists, system designers and installers, academia, and local and state regulators. Several of the requirements of the proposed rule have been developed over many years and are collectively referred to as "best management practices". Many installers have previously embraced and have reaped the benefits of proactively incorporating these best practices into all systems they install.

It is hard to put an exact value on many of the benefits of these proposed revisions to this rule in part because many of them are already routine for installers and in part because it is hard to put a figure on the safety and security these systems will provide homeowners over the years. These changes will also provide a certain level of peace of mind knowing that the system installed for their home is best suited to the unique characteristics and limitations of that specific site, thought has gone into ease of system maintenance, and assurance that whatever installer they hire to install the system will be held to a consistent level of best design standards, professional work, and approved materials.

a. Estimate of Primary and Direct Benefits of the Rule

Please refer to the indicated row on the accompanying Excel spreadsheet for a detailed analysis of costs and savings. Costs and benefits depicted in this analysis are estimates and averages, and it must be understood that costs and benefits vary greatly due to many factors including: soils, type of system, availability of components in different areas, number of bedrooms in a home, installer, design requirements, professional fees, and varying prices for components.

1. This change allows local health departments to require either an aerobic treatment unit when a system has failed due to high strength waste or an approved plan to address the high strength waste. Requiring an aerobic treatment unit or allowing the homeowner to plan a course of action to reduce waste strength in the home will potentially have a huge savings impact on the homeowner. If high strength waste is allowed to continue to be discharged to an on-site sewage system that is not designed to treat high strength waste, failure is probable and will likely require another replacement system if not addressed. According to installers consulted by IDOH, the average cost of an aerobic treatment unit is \$2,500; however, this may ultimately save the homeowner the cost of a new system, which averages \$15,000, representing the cost of a full replacement system per the installers consulted, depending upon the type, size, and complexity of the replacement system. In lieu of adding an aerobic treatment unit to a system, the homeowner may choose to create a plan, acceptable to the local health officer, to reduce the waste strength being produced. This would incur no up-front costs, but could save the cost of the replacement system. This is significant because if steps are not taken to reduce the waste strength and a new system is installed, it is likely that the new system will fail for the same reason the previous system failed. This is also a flexible option because the homeowner is able to create a course of action to reduce waste strength that will work in their situation rather than only requiring aerobic treatment of the system. Further explanation may be found in row 67 of the spreadsheet.

2. The rule update requires an inspection before connecting or reconnecting to an existing system, when the local health department must use best judgment to approve a system and the system cannot meet the standards in the rule, and for operating permit renewals. The basic standards for these inspections are set out to ensure consistency for these inspections and to ensure that sites are properly evaluated to protect homeowners from spending money on a system that may not work. These inspections benefit homeowners because they can determine if existing systems are suitable for use, saving the cost of purchasing a new system. As noted above, a new system has an average cost of \$15,000. Further explanation can be found on rows 66, 70, and 71 of the spreadsheet.

3. The rule updates require distribution box risers to be installed on all newly installed distribution boxes that use more than one outlet to discharge effluent to the soil absorption field. This would eliminate the need for locating and digging up a distribution box for inspection and/or troubleshooting. Many issues with soil absorption fields are due to an unlevel distribution box. A quick and convenient way to observe this most critical component could save a homeowner up to \$200. It can take a lot of time and effort to locate a distribution box that does not have a riser or one that is not documented well on a plan, cost savings vary depending upon the installer and the difficulty and time it takes to locate the small box in a large yard. This is compared to the estimated cost of \$30 to install a riser on the distribution box, according to installers consulted. Easy access to the distribution box can resolve unequal flow and plugging issues quickly and efficiently. Unequal flow can cause a system to fail, resulting in repair or replacement costs up to an average of \$15,000 according to installers consulted. Further explanation can be found in row 105 of the spreadsheet.

4. The rule requires the area of the on-site sewage system and the dispersal area to be protected from disturbance before, during, and after construction of the system. Protecting the area of the soil absorption field after the soil evaluation will potentially save the homeowner time and possibly even denial of the site due to factors of which they may be unaware. Concrete trucks, utility installations, home construction, deliveries, and even homeowner activities can all destroy a site for an on-site sewage system. If this happens, the homeowner is required to either take steps to remediate the site or find another site that is suitable for installation. In some cases, there may not be a way to remediate and there may not be another suitable site.

Further, the rule allows the local health department to require a site visit prior to issuing a construction permit which may eliminate unnecessary costs and delays for a homeowner. In many cases, a two-dimensional plan does not depict all of the limitations to installing an on-site sewage system at a site. Working together with the designer/installer prior to permitting the system to ensure that everything will go smoothly at installation and that the system will be in compliance with the rule is invaluable. The costs a homeowner could face if the site is disturbed or unforeseen limitations exist at the property include the cost of an on-site soil evaluation, which is an average of \$300 per visit per soil scientists consulted, the cost of relocating and redesigning the system which could be thousands of dollars, depending upon specific circumstances, or making the property unsuitable for an on-site sewage system, which could cause loss of tens of thousands of dollars, if the property cannot be used for a home site. The rule updates help to protect homeowners from these preventable costs. Further explanation can be found in row 121 of the spreadsheet.

5. At least one tank is required for any on-site sewage system; most frequently, that is a septic tank, and, less frequently, dosing tanks and holding tanks are used. It is very critical that these tanks are installed properly on proper bedding material and backfilled correctly. One other aspect of tank installation that is often overlooked is buoyancy control. Any tank, concrete or poly, can become buoyant in the right conditions. Most poly tank manufacturers have tank installation manuals and the National Precast Concrete Association has Best Practices for On-site Wastewater Tanks that discuss necessary buoyancy control measures needed for tanks. In recent years, we have been notified of many tank buoyancy occurrences, and this is very concerning. Tanks that become buoyant and shift or move can damage pipes going into or out of the tank; tanks can become deformed and may

no longer be watertight. Dosing tanks can have the effluent pump and floats shift from their places and not dose the system correctly. While there is sometimes an initial cost for installing buoyancy control, installation of anti-flotation devices which prevent tanks from floating can save the homeowner potentially \$1000 or more that would be needed to dig out and reset a tank or to replace a damaged tank. Further explanation can be found in row 101 of the spreadsheet.

6. Compacted soil restricts water movement through the soil profile; it has always been very detrimental to install an on-site sewage system into compacted soils without proper remediation which is sometimes very hard to do. The statute referenced now allows a registered soil scientist to make the determination that the site is usable if the location can be made suitable for installation of on-site sewage systems within two years through plantings that loosen and aerate the soil or through other means. This could potentially make sites that were previously unsuitable for an on-site sewage system become suitable, which could open opportunities for homeowners in this situation. We have estimated an average savings of \$5000 per system, but it will have impact on very few systems each year. Further explanation can be found in rows 114 and 118 of the spreadsheet.

b. Estimate of Secondary or Indirect Benefits of the Rule

1. Overall, the rule updates require adequately evaluated sites, proper system design, confirmation of compliance with the rule, and use of best practices when installing on-site sewage systems. This will result in fewer system failures, leading to fewer health hazards, and preservation of the environment. This creates a healthier environment for all, but it is very difficult to put a dollar figure on the benefits of a healthier environment and clean drinking water. Diseases from contact with untreated sewage or contaminated drinking water can cause severe illness and possibly death.

2. The rule updates help to ensure that a system is properly installed upfront which prevents problems later. Ultimately, homeowners will need to replace systems less often in the future because mistakes in installation will be prevented. Cost of a replacement system averages \$15,000 per installers consulted, but varies greatly with area and type of system required.

3. This rule revision clarifies many requirements so there will be less variation in enforcement of the rule by local health departments, leading to increased consistency throughout the state for regulation of on-site sewage systems. There will be less confusion about rule requirements for all involved. This benefits homeowners, installers, soil scientists, inspectors, and local regulators by ensuring fairness, reducing errors between parties, creating an efficient workplace, and increasing credibility of state and local regulators. It is difficult, if not impossible, to set a monetary value for this benefit, but a reduction in plan review times, frustration from multiple plan submissions, frustration from the process varying from county to county, and quicker permit turn-around times is invaluable to homeowners and installers alike.

4. The details of the rule revision will ensure that all installers are competing fairly for each site, everyone has similar opportunities, and there is no unfair advantages due to regulatory requirements. Homeowners will be getting comparable services from any installer and will be protected in their investments. Peace of mind is invaluable to a homeowner, so no dollar amount can be stated for this benefit.

5. This rule revision provides multiple options for homeowners so that they have more input in the on-site sewage system that will be installed at their site, and the system can be designed to specifically meet their needs and their site. Providing options for homeowners allows them to decide what works best for them rather than having it all be dictated by regulation.

c. **Estimate of Any Cost Savings to Regulated Industries**

It is estimated that there will be an overall cost savings of \$1,182,700 for all impacted parties over the two years of implementation. Those savings are explained in more detail throughout the document and in the attached spreadsheet at lines 8, 120, 121, 122, and 128.

VI. Cost Analysis

The revised residential on-site sewage systems rule will have financial impact on soil scientists, system installers, and homeowners whose homes are beyond the reach of sanitary sewer. It is likely that the increased costs to soil scientists and system installers will be passed on to homeowners, and estimates provided in this analysis assume the end consumer, the homeowner, will bear all increased costs as well as benefits from any cost savings.

A survey of local health departments was completed to determine the number of on-site sewage system construction permits that were issued in 2023 and 2024. 94 local health departments were surveyed (92 counties and 2 cities) and 77 responded (76 counties and 1 city). The one city health department response has been removed from the calculations of total permits issued. This city only issued one construction permit in these two years, and it was skewing the averages down. Averages were determined for just 92 local county health departments, and one construction permit was added to the statewide totals for each year to represent the city health departments.

Estimated total number of on-site sewage system construction permits issued in 2023:	7,189
Estimated total number of on-site sewage system construction permits issued in 2024:	7,297
Estimated average total number of on-site sewage system permits per year in 2023/24:	7,243
Estimated total number of on-site sewage system construction permits issued in 2023/24:	14,486

Connection to sewer would be a cost that is separate from the increased costs of installation of an on-site sewage system; therefore, costs for connection to sewer and increased costs for on-site sewage systems are separated here. The costs included below are the difference in cost of connection to sewer (\$20,000) and installation of an on-site sewage system (\$15,000).

1. It is estimated that connection to sewer would be required in 0.1% (approximately 7) of cases.

1 year cost = 0.001 X 7243 permits X \$5,000 = \$36,215*

2 year cost = 0.001 X 14,486 permits X \$5,000 = \$ 72,430*

*This is only one option that a local health department may require, if all conditions are met, in case of a failing residential on-site sewage system.

Some counties have local ordinances that require some things that are included in the rule update. IDOH excluded those jurisdictions from the cost calculations because those subject to those local ordinances are already paying any increased costs associated with compliance.

Negative Fiscal Impacts:

Negative fiscal impacts are indicated as Costs in Columns N and O in row 132 of the Excel spreadsheet.

Positive Fiscal Impacts:

Positive fiscal impacts are indicated as Savings in Columns Q and R in row 132 of the Excel spreadsheet.

Overall Fiscal Impact \$710,417/1 year \$1,420,833/2 years

a. Estimate of Compliance Costs for Regulated Entities

Total compliance costs for the first two years are \$1,420,833. While the total cost appears high, it is because of the number of onsite sewage permits issued each year. Many individuals will have little cost increase, with the greatest cost increase of approximately \$5,000 applying to fewer than 10 permits per year.

	1 Year	2 Years
Connection to Sewer (cost of connection minus the average cost of installing an OSS)	\$36,215	\$72,430
On-site Sewage System		
Totals Costs	\$1,301,767	\$2,603,533
Total Savings	\$591,350	\$1,182,700
Overall Net Fiscal Impact (Cost)	\$710,417	\$1,420,833

b. Estimate of Administrative Expenses Imposed by the Rules

There are no anticipated administrative expenses that will be imposed by this rule.

c. The fees, fines, and civil penalties analysis required by [IC 4-22-2-19.6](#)

This rule will not add or increase any fees, fines, or civil penalties.

d. If the implementation costs of the proposed rule are expected to exceed the threshold set in [IC 4-22-2-22.7\(c\)\(6\)](#)

The net compliance and implementation costs for the revisions to this rule are estimated to be above the \$1,000,000 threshold for two years. Actual estimated cost for 2 years is \$1,420,833.

Discussion on items listed above.

a. Addition of definition of tiny house and recreational vehicle and providing an alternative sizing requirement for these options (rows 8, 25, 46, and 120 of the spreadsheet)

Discussion: Currently there is only one way to size a soil absorption field for a residence in the residential rule. The number of bedrooms and bedroom equivalents is multiplied by 150 gallons per day to determine the design daily flow. The larger the design daily flow, the larger the system will be. With the increase in the number of tiny houses and recreational vehicles being used as homes, there was no provision in the rule for allowing sizing based on a lower design daily flow for these homes, even though they typically do not have conventional,

defined bedrooms and typically have less water use than a traditional home. By providing the definition of a tiny house and recreational vehicle, and an amended definition of design daily flow, the rule will allow alternative sizing flows for these residences.

Cost savings: Cost savings for on-site sewage systems for tiny houses could be substantial depending upon the number of sleeping spots in the home. An estimated 0.5% of permits could be issued for tiny houses with an estimated savings of \$1,000 per system, per installers consulted, for total cost savings of \$36,220 per year.

Benefit: Allows the owner flexibility in the sizing of the on-site sewage system if they choose to construct a tiny house or use a recreational vehicle as a home and install a system designed to meet their needs.

b. Required connection to sanitary sewer (row 52 of the spreadsheet)

Discussion: This rule allows a local health department to require a residence to connect to an available sanitary sewer if there is a failure of the existing on-site sewage system and if the sewer is within three hundred (300) feet of the property line and within 150% of the cost of installing a new on-site sewage system. This is similar to authority in [IC 8-1-2-125](#) for not-for-profit utilities, [IC 13-26-5-2](#) for districts, and [IC 36-9-23-30](#) for municipalities. These statutes allow not-for-profit, district, and municipal utilities to require connection to sewer if the property is within 300 feet of an available sewer. These statutes allow the homeowner to file for exemption from connection to sewer as long as the system consists of a septic tank and a soil absorption field that is not in failure. The proposed language in the rule provides for stronger limitations on local health departments based on price compared to the not-for-profit, district, and municipal utilities authority to require connection to a sewer. Average costs for connection to a sewer system explained in the next paragraph are within 150% of the cost of a new system, which supports the use of the 150% limitation because costs above 150% would be above the average and more burdensome to the homeowner.

Cost: The average cost for connection to a gravity sewer line with 4" SDR 35 piping, or to a pressure sewer with 2" SDR 11 piping, at a distance of 300 feet is an average of \$20,000 according to installers consulted. The estimated cost for connection to a pressure sewer does include the cost of a grinder pit and pump, if necessary. In cases where a utility requires connection, there would be no increase in cost to the homeowner from the requirements of this rule because those costs are from other statutory mechanisms. This estimate does factor in a connection fee, which varies greatly between utility companies. The initial installation costs of an on-site sewage system, estimated at an average of \$15,000 per installers consulted, would likely be slightly less than the initial average cost of connection to sewer, estimated at an average of \$20,000 per installers consulted; however, with a sewer connection, long term, there would never be a concern for a large replacement or repair fee as there would be for a replacement on-site sewage system. The sewer would include a monthly bill with an average bill of \$80 per month based upon statistics, but all on-site sewage systems do require operation and maintenance, and that typically does not come on a monthly basis. Each time operation and maintenance costs are incurred, they would be significantly higher than a monthly sewer bill. Pumping a tank averages \$250, per pumpers consulted, but would only be required every 3 to 5 years which is equivalent to approximately \$7 per month. Repairs can cost in the hundreds to thousands of dollars, depending upon what needs to be repaired or replaced, and a whole new system averages \$15,000 per installers consulted. The cost of the regulation is the

difference between the cost of the sewer connection and the alternative remedy cost of installing a new on-site system, which is approximately \$5,000 per year.

Benefit: Generally, for public health purposes, sewers are preferred to on-site sewage systems because there are fewer risks of health hazards from sewers. Further, homeowners connected to a sewer system would not have to worry about ever installing a replacement system, having a public health hazard in their yard, avoiding use of the area of the system for other purposes, or preserving a portion of their yard for future replacement system installation. With connection to sewer, use of indoor plumbing would never be dependent upon weather conditions, whereas many on-site systems must see limited use during large rain events and snow melts. While there is a monthly bill for sewer connection, averaging \$80 per month, the maintenance costs of an on-site sewage system can be exorbitant if the system does not function properly or is not properly maintained. The public health benefits and specific benefits to the homeowner outweigh the costs of the requirement.

c. On-site Sewage System Installer Registration (row 61 of the spreadsheet)

Discussion: This provision would require on-site sewage system installers to register in each local jurisdiction. Historically, approximately 75% of local health departments had ordinances requiring registration but all local ordinances more stringent than the state rule were voided. Adding this provision requires providers to register with the local health department. [IC 16-41-25-12](#) allows an individual providing on-site sewage system services in one county that meets the statutory requirements to provide those services in any county in Indiana. The statute expressly states that the individual may be required to pay a license fee in a county where they perform the services. This statute recognizes the registration process for installers and the rule change makes it explicit. The rule also clarifies requirements for competency training requirements to ensure compliance with [IC 16-41-25-12](#).

Cost: Local health departments do not always charge for installer registration, but in some cases do charge an administrative fee. Typically, registrations are renewed every year, but in some cases may be good for two or three years. \$100 is the average cost of registration per local health departments consulted. This cost is not based on the number of permits but the number of installers and where they would choose to be registered. It is difficult to provide a total cost for this because it is not known what it will cost to register and how many installers may be registered with multiple local health departments.

Benefit: Local health department registration of on-site sewage system installers gives both homeowners and regulators some confidence in the installer's ability to know the rules and install a system in compliance with them. On-site sewage system installation and repair are very technical and can be very costly to the homeowner if not done correctly, though it is difficult to put a cost savings amount given the wide variety of problems that occur. This also allows the local health department a way of offering a list of installers to homeowners, making it easier to find a reputable installer. They also have contact information for the installers should they need to contact them for any reason. This change also provides clarification to help ensure compliance with [IC 16-41-25-12](#).

d. Construction plan requirements (row 63 of the spreadsheet)

Discussion: The rule currently requires minimum information on an application form and plans of sufficient clarity that compliance with the rule can be verified; there are no specifics indicated beyond that. Not all local health departments require the same level of detail in the plans which cause inconsistent requirements in different jurisdictions. Written plans need to contain the elements in the rule revision to ensure that a system is compliant with rule requirements.

Cost: There really should be no additional cost associated with construction plans including this level of detail, as that is the intent of the current rule and is required for plans of sufficient clarity that compliance with the rule can be verified. A small increase of an average of \$15 is given, as indicated by installers consulted, in case this level of detail in the plans was not previously required by the local health department. This represents only the increased cost from what the typical cost is under the current rule. Assuming that approximately 75% of permits issued are already compliant with this requirement, the average cost increase is approximately \$27,165 per year.

Benefit: The changes help to ensure that an approved construction plan will be verified to be compliant with the rule. The Technical Review Panel has requested additional clarity be added to the rule so that every local health department interprets this requirement the same way and so that there is consistency among local health departments for plan review. This safeguards the homeowner knowing that their system complies with the rule and best practices. This could add value to the property if a detailed plan is available for future use. The plan should be viewed as a reference document for the property similar to other property records and could be a resource if an inspection of the system is ever required. This also would likely reduce the plan review and resubmittal periods which would benefit the property owner by getting a construction permit quicker. When building a new home, this time savings is appreciated by the owner and the builder, and in the case of a repair or replacement system, this would serve to eliminate the health hazard associated with a failing system sooner. Monetary values cannot be assumed for the benefits, but timeliness and quicker turn-around times are beneficial to all.

e. Aerobic treatment unit for reduction of high strength waste (row 67 of the spreadsheet)

Discussion: This rule revision would allow a local health department to require an aerobic treatment unit to be installed in a replacement system when high strength waste is a contributory factor in the system failure. Alternatively, the local health department may allow a homeowner to prepare a plan of action to reduce waste strength in lieu of installing an aerobic treatment unit.

Cost: Installing an aerobic treatment unit in an on-site sewage system could potentially cost a homeowner anywhere from \$2,500-\$10,000 depending upon the type of unit chosen to be installed. However, the homeowner could have lower or potentially no cost, if the homeowner agrees to a plan of action to reduce the waste strength produced in the home. This rule change will apply to approximately 0.5% of permits for an average total cost of \$90,550 per year.

Benefit: When high strength wastewater is generated in the home, it often leads to excessive biomat buildup and plugging of outlet filters and soil pores, leading to premature system failure, which is a health hazard. The use of an aerobic treatment unit will prevent premature clogging of the septic tank outlet filter and the soil

absorption field, leading to greater longevity of the system and reduced costs of installing a replacement system. A replacement system averages \$15,000 per installers consulted, and the new system could fail if the high strength waste is not addressed in the home or in the system design. The installation of an aerobic treatment unit could be less than installing an entirely new system if the system failed due to high strength waste. The waste coming out of the aerobic treatment unit would be “cleaner” (less biochemical oxygen demand, lower total suspended solids, and sometimes lower bacterial count), so if a failure were to reoccur, the health hazard created would be “less” of a hazard.

f. Operating permits (row 70 of the spreadsheet)

Discussion: This rule update specifies the types of systems local health departments can require to have operating permits and updates requirements for operating permits. The issuance of operating permits will allow the local health department to ensure that regular maintenance is being carried out on systems that pose a higher risk of failure. Systems that would pose a higher risk of failure include those systems with components as specified in [IC 16-19-3-27\(a\)](#), systems that are permitted by the local health department for replacement of a failed system under “best judgment” because site or soil conditions prevent full compliance with the rule, or systems that include a sanitary vault privy or a sewage holding tank. [IC 16-19-3-27\(b\)](#) requires the executive board to adopt reasonable rules for issuance of operating permits for those components in subsection (a). [IC 16-41-25-9](#) allows use of sewage holding tanks on a permanent basis and allows local health departments to establish requirements for operation of sewage holding tanks. Regular maintenance is required for all systems, regardless of the system type; the operating permit will simply ensure that the needed maintenance is completed in a timely and routine manner for higher risk systems. This rule allows local health departments to require operating permits on any or all of the system types included above but does not require any local health department to issue operating permits.

Cost: Local health departments set their own fees for operating permits in compliance with [IC 36-11-2-2](#), which states that the periodic permit fee cannot exceed the actual cost incurred. An average fee of \$200 is based on average operating permit fees at local health departments. This operating permit fee does not include any required maintenance or repair of components that may be required. However, maintenance (pumping of the septic tank and evaluation of the soil absorption field) and repair or replacement of components is a cost that would be incurred with or without the inspection. In many cases, the inspection would identify problems or the need to repair or replace system components earlier than would be observed without the inspection. Preventive maintenance and early intervention when components are not functioning as they are designed will result in lower overall costs and reduced emergency situations. Operating permits would be expected for approximately 5% of systems permitted each year for an approximate total cost of \$71,716 per year.

Benefit: Owners would be assured of proper system function with periodic inspections of the system. Systems would have increased longevity if properly maintained throughout the life of the system. Owners would also be notified when the system needs further maintenance or if system abuse is causing issues with the system prior to the system failing. Owners of sewage holding tanks and sanitary vault privies would be monitored closely so that sewage is not allowed to overflow from the holding tank or vault of the privy causing a health hazard.

Adequate maintenance over the life of an on-site sewage system can prevent the requirement for replacing the entire system with an average cost of \$15,000, per installers consulted, and emergency services which typically can double professional fees for services. The costs of a health hazard caused by a failure are difficult to quantify because they would vary greatly depending on the facts of the failure.

g. On-site Sewage System Inspection (row 71 of the spreadsheet)

Discussion: The rule currently requires inspection of an existing system for use of best judgment to evaluate the system components and determine a potential cause of failure, but no instruction is provided indicating the extent, the directions, or the documentation required of the inspection. With this revision, an inspection would also be required when there is an application requesting that a home be connected to or reconnected to an existing on-site sewage system. A local health department is also able to specify a system inspection prior to renewal of an operating permit, and this would provide clarity for that type of inspection as well. Further, this section would encourage the use of these protocols for any other inspection of an on-site sewage system, such as if a buyer would voluntarily want an inspection completed before a real estate transaction was completed.

Cost: Depending upon whether a permit is available for the existing system, the inspection may cost nothing if the installer doing the connection/reconnection or system replacement also does the inspection. If there is no permit on file in the local health department, the inspection will likely be at the high end due to more investigation and probing that would be necessary. In the approximately 3% of the sites that require on-site sewage system inspections, the average increase in cost would be \$250, per inspectors consulted, for an approximate total of \$53,243 per year.

Benefit: This requirement would ensure that all system components are inspected and documented so that nothing is overlooked. The homeowner can have confidence that they know the exact condition and location of each component of the system. The local health department can also expect consistent information provided in the reports to ensure that any problem with the system is addressed and corrected as soon as possible so as to prevent failure. This consistent information will allow local health departments to issue construction permits for use of best judgment and for connection or reconnection to an existing system with confidence in knowing that the system has a septic tank and a soil absorption field that is not in failure. This would prevent connection to an existing system that was either not a system or is a system in failure, reducing the health hazards risks. This benefit is not necessarily monetary, but reduced health hazards, peace of mind, and efficiency in determining if a system can be reused, if best judgment can apply, and if the system is being operated properly to prevent failure are benefits that are difficult to quantify. Without a full inspection of a system, the local health department may not allow the reuse of the existing system, and this would require the homeowner to install a completely new system at an average cost of \$15,000.

h. Minimum of 3 soil evaluation sites (row 75 of the spreadsheet)

Discussion: IDOH has a long history of recommending at least three soil evaluations per residential soil absorption field site. This has been provided to local health departments and soil scientists in memo format on multiple occasions as well as commonly being a training point for local health department staff. Currently, there is approximately 96% compliance with this requirement. One soil scientist is known to do less than 3

evaluations/site, and one local health department right now only wants 1 evaluation per site. In the local health department survey, a current compliance rate of 96% was indicated.

Cost: There may be an additional cost per on-site evaluation for very few, if any, soil evaluations because most soil scientists do this already, so this would not change anything they do at the site. There may be an increase up to \$50 in up to 4% of cases for an approximate total of \$6,954 per year. Soil scientists who work in the one county who only wants one boring currently likely would not charge additional as they do at least 3 on-site soil evaluations in other counties in which they already work.

Benefit: Given the size of most soil absorption fields, it is critical to know the most limiting soil features in the entire area of the soil absorption field so that measures can be taken to overcome the most limiting of conditions at the site. One or two soil borings/pits are insufficient to determine the characteristics of the entire site. On-site sewage systems are very expensive (an average of \$15,000, per installers consulted) and homeowners will get systems better suited to their site when soils are well described, which will help to lessen malfunctions and failures. The monetary benefit from this is difficult to determine as most sites have 3 evaluations now, and because the harm prevented varies depending on the facts of a situation.

i. Locating soil evaluation spots from fixed reference points (row 78 of the spreadsheet)

Discussion: In order for a soil evaluation to be useful and to ensure that the soil absorption field is placed in the area evaluated, the soil evaluation locations must be identifiable and replicable. Some use flags to mark boring locations, but for a number of reasons, flags may not remain in place until the system is installed. Locating the sites from two fixed reference points that will be in place until the system is installed is critical to getting the system installed in soil that has been evaluated. In the case that there are not two fixed reference points readily available to the soil scientist, they may use only one fixed reference point. Currently, all soil scientists must locate each boring or pit on a map of the site, but there is no requirement as to the point from which they measure or locate the borings or pits. In some cases, these are measured from an arbitrary point which may or may not be fixed or available for use when the system is designed and installed.

Cost: IDOH believes this requirement will apply to approximately 98% of permits each year, but that for approximately 85% of the applicable permits, soil scientists already comply with this requirement. It is estimated that in approximately 15% of soil evaluations, two fixed reference points would need to be located and used for measurement; most already use one fixed point. Since soil scientists must locate the borings anyway, this should not be a significant cost increase; however, for these 15% of sites, an average of \$10 per site has been applied based upon estimates from installers for the location of two fixed reference points on the property. This is an approximate total of \$10,649 per year.

Benefit: Using two fixed reference points from which to triangulate borings and pits will ensure that the system is designed and installed in the correct location and into soils that have been described. The system type and sizing are based upon the soils at the site, and installing the system where the soils have not been evaluated wastes the cost of the evaluation, an average of \$300, per soil scientists consulted. If the information needed to make the system type and size decisions for the site is not accurate, the system type and size will likely not be correct for the soils in which it is installed. The ease of finding the borings or pits at the site would be beneficial

for the installer or designer of the system in creating an accurate design and for the local health department for ensuring that the system is placed in the correct location for which the system was designed. Again, it is difficult to put a monetary value on this, but just in the designer's time savings alone, it likely saves the \$10 cost associated with the increase in cost of the soil evaluation.

j. Sewage holding tanks (row 97 of the spreadsheet)

Discussion: In 2023, [IC 16-41-25-9](#) (SEA 414) was added to allow the use of sewage holding tanks on a permanent basis in any situation. This statute provides the maximum allowed holding tank size but is silent on the minimum holding tank size. A minimum specified size is needed to allow local health departments to regulate the tanks that are installed.

Cost: The significant costs of using a holding tank are the actual installation cost and the cost of having the tank pumped when needed, both of which are due to a choice made by the homeowner. Additional capacity in a holding tank (a larger tank vs a smaller tank) is a relatively minor cost, which we have estimated at \$700 based upon information provided by installers and tank manufacturers. In our survey, it was found that 144 holding tanks were installed in 2024. Nineteen of twenty-three local health departments with local ordinances which have been approved by the Technical Review Panel have this minimum sizing requirement in place now. Only a small percentage of holding tanks would not be compliant with this already for an estimated average cost per year of \$25,354.

Benefit: When deciding what size holding tank to install, one must consider a balance between initial installation costs and long-term costs of pumping the contents regularly. Most pump trucks have a capacity of 1,000-4,000 gallons, so one must weigh the costs considering that a 500-gallon tank will need to be pumped twice as frequently as a 1000-gallon tank, nearly doubling the pumping costs over time. Mileage and the dumping costs do not vary much with amount of wastewater pumped, be it 500 gallons or 1000 gallons. The benefit to owners would be a conscious effort to reduce the costs of long-term pumping of the tank which in turn reduces the possibility that owners will allow sewage tanks to overflow because of the costs associated with pumping. If owners are concerned about long-term costs, a larger tank will be beneficial, and the less the pumping costs, the more likely owners are to properly maintain the tank. An average septic tank pumping costs \$300 for 1000 gallons as provided by pumpers consulted, and if that 1000-gallon tank received 100 gallons of sewage per day, the 1000-gallon tank would need to be pumped every 10 days for a total annual cost of \$10,950. If the cost of pumping 500 gallons were \$250 (not many typically pump that small volume), and the tank was receiving 100 gallons of water per day, the 500-gallon tank would need to be pumped out every 5 days, resulting in a yearly cost of \$18,250. The approximate \$700 increase in tank size would be saved in the first 70 days of use and pumping.

k. Risers on all newly installed distribution boxes that use more than one outlet to discharge effluent to a soil absorption field (row 105 of the spreadsheet)

Discussion: The current rule allows risers on distribution boxes but does not require them. There are a number of installers that already install risers on distribution boxes as a best management practice. The Technical Review Panel members believe that putting this requirement in our statewide rule is advantageous to the

property owner. The revised rule would require risers to the surface on all newly installed distribution boxes that use more than one outlet to discharge effluent to a soil absorption field and are installed with the top below final grade.

Cost: Approximately 10% of 7244 total on-site sewage systems require distribution boxes that use more than one outlet to distribute effluent to the soil absorption field, and that is 724 total systems that this would apply to. Approximately 20% of those 724, or 144.8 systems, requiring distribution boxes using more than one outlet are already installed with risers to final grade which makes them compliant. That leaves 579.2, or 80% of the 724 permits affected that are not compliant already. 579.2 permits of the total 7244 permits is approximately 8% of all systems that would need to comply, with an average cost of \$30 each depending upon the material they are made of and the height of the riser as provided by installers consulted for an approximate total of \$17,386 per year.

Benefits: Having readily-available access to the distribution box can allow simple measures to be taken to access the box, to assess problems, and to fix unequal distribution. For all systems using a distribution box, the distribution box provides the best, most unintrusive access to a soil absorption field to assess system function and to troubleshoot failures, though it is difficult to quantify the benefit. This would also save homeowners the cost and inconvenience of having to locate and dig up an underground distribution box when an inspection is needed or a problem arises, which can cost an average of \$50, per installers consulted. Locating distribution boxes can be very difficult. Trying to find a small box (12"x12") in a yard when there is no plan showing the location of the box or the plan is not accurate, causing a possible increase in cost to address problems with a system due to the time spent searching and digging in the yard. Risers solve this problem by making the distribution box easy to locate.

I. Distribution box stabilization (row 106 of the spreadsheet)

Discussion: The intent of the current rule is to have the distribution box installed so that it does not move or become unlevel during backfilling of the system and operation of the system. Approximately 50% of systems require a distribution box and an average of 80% of distribution boxes are set correctly. An estimated 10% of systems with distribution boxes do not have the distribution box stabilized well enough to prevent movement.

Cost: There really should be no additional costs to this requirement because the intent of the rule requires this now. However, for the 10% of systems that need better stabilization, an approximate \$25 average cost could be incurred based upon information provided by system installers for an approximate total of \$18,110 per year.

Benefit: It is crucial to proper system function to have equal distribution of effluent to the entire soil absorption field. An unlevel distribution box will not provide equal distribution. This would likely lead to system failure, increased costs for the homeowner, and bad public health outcomes with sewage possibly entering the surrounding environment. If a distribution box becomes unlevel, it may not be known for some time, or if a wet spot appears, it might be ignored by a homeowner. Eventually this could lead to system failure if allowed to continue. If a replacement system is required due to this failure, the homeowner will pay an average of \$15,000 for a replacement system, per installers consulted. Regular maintenance should include observations of the interior of the distribution box, but this is often not done if the distribution box is not readily accessible. With

easy access, distribution boxes can be easily checked by a service provider or even the homeowner if there are early indications of an unlevel box. If the unequal distribution is identified early, and steps taken to repair the situation, the homeowner may only see an average service call cost of \$200, which would include installation or adjustment of flow equalizing devices inside the distribution box.

m. Protecting and marking the soil absorption field area (row 121 of the spreadsheet)

Discussion: A system designer must visit the site of a proposed on-site sewage system in order to gather site specific information necessary to design a system unique to each site. In the design phase, it is critical to ensure that the system, as designed, will physically fit on the site, will be designed on contour, and will meet the provisions of the rule. At the time of the site visit, the area of the system components should be protected from disturbance. Marking system components at the site should be part of the design process and could also be part of the protection for the site. Spray paint, flags, lath, or other acceptable methods can be easily used to mark the system components.

Cost: The requirement for marking system components at the site will require very little additional cost, as the designer will already be on-site and needs to verify that the system can be designed in accordance with the rule. Costs would include spray paint, flags, lath, or other acceptable materials for marking. Some of these, such as flags or lath, could be retrieved at the time of installation for reuse. An average cost of \$150 for marking the on-site sewage system site, as provided by installers consulted, has been included for those sites that are currently not being marked and protected, for an approximate total cost of \$619,362 per year.

Benefit: This is estimated to provide security potentially to an additional 57% of system sites that could be affected. The benefits of marking the system at the site include protection of the site from others who may be doing work at the site, ensuring that the entire system will fit on contour at the site, and allowing the local health department to have a visual representation of the system which they can use to assist with plan review and verify compliance. In the time between the soil evaluation and the system installation, there are many times when there could be disturbance to the soil absorption field area, especially with new construction. If there is disturbance during that time, the soil must be re-evaluated and the system design altered (if possible) to overcome the extent of the disturbance. The potential savings from avoiding destruction of the soil absorption field by vehicular traffic, landscapers, builders, deliveries etc., could equal the cost of a soil evaluation, averaging \$300 per soil scientists consulted, plus the cost of relocating the system, if that is even possible. Relocating the system would incur time and expense in finding a suitable area, redesigning the system, and having the local health department review the plan for compliance. This could cause a change in the type of system that is suitable for the site. Depending upon the extent of revision necessary, this may cost a homeowner a minimum of \$300 for a new soil evaluation up to hundreds of dollars for a new design. Ultimately, if there is no alternate area for a replacement system, they may not be able to use the site for a residence and will have lost the value of the property.

n. Permit for abandonment of an on-site sewage system (row 125 of the spreadsheet)

Discussion: The current rule requires abandonment of an on-site sewage system if there will be no continued use of the system. There is no specific requirement for a permit for abandonment currently, but approximately

50% of local health departments currently do issue abandonment permits.

Cost: The cost of the permit for abandonment will vary between departments but will average \$75 based upon average permits fees from local health departments. It is estimated that 50% of the time local health departments are already issuing permits for abandonment of systems, and an estimated <1% of all permits issued would be for abandonment for an approximate total of \$2,700 per year.

Benefit: Obtaining a permit for abandonment of the system will provide a permanent record of proper abandonment of the system for the owner and ensure that the local health department will oversee that the abandonment is done in compliance with the rule. Proper abandonment will ensure that the tank(s) being abandoned will not become a health hazard by collapsing or overflowing. This benefit ensures compliance with abandonment requirements and elimination of a possible health hazards. It also provides assurance to future homebuyers that old systems will not cause future problems. Future costs to a homeowner could arise from the improper or inadequate abandonment of a system that leads to required remediation of a health hazard or damage to property.

o. Abandonment allowance of removed materials to be used as fill (row 128 of the spreadsheet)

Discussion: This proposed change lessens the regulatory burden associated with abandoning soil absorption fields. Currently the rule requires materials removed from an abandoned soil absorption field to be taken to a licensed landfill. Transport to and dumping at a licensed landfill, is very expensive, assuming there even is one locally that will accept the material. If this material is allowed to fully dry out prior to removal and transport, there should be no health hazard for using the dried material (stone, sand, and/or soil) as fill material. As it would be covered up, any pathogens remaining would be covered and eventually die off. This update allows the materials to be used in this manner.

Cost savings: It takes multiple triaxle loads to haul this material from the site, and the cost of transport could be as high as \$250 a load, per installers consulted. At an estimated 5 loads, that could be as much as \$1,250 in transportation fees and the cost of dumping at the landfill could be another \$500. The average cost savings is \$63,385 per year.

Benefit: The benefit to this change is simply the reduction in cost of abandoning a soil absorption field that needs to be removed from the ground. It could also benefit the owner if there is an area that needs to be filled in on the site because they could use this existing fill rather than purchasing new.

VII. Sources of Information

a. Independent Verifications or Studies

A survey of 94 local health departments was conducted as outlined above. This survey included total number of on-site sewage system construction permits in each jurisdiction in 2023 and 2024. It also included, for both years, the number of new and repair/replacement permits issued, the number of permits for different types of soil absorption field technologies, the number of systems requiring distribution boxes, the number of systems requiring subsurface drainage, the number of permits issued for sewage holding tanks, and the number of soil

evaluation reports received with a minimum of 3 soil profile descriptions. The results of this survey were used in the fiscal impact analysis for the rule revision.

Personal conversations were had between IDOH staff and soil scientists, installers, and others in the industry to put together a composite view of the remainder of the fiscal analysis. Costs associated with these changes vary drastically by installer, area of the state, and available suppliers, so typically an estimate on the higher end was chosen for use in this analysis.

b. Sources Relied Upon in Determining and Calculating Costs and Benefits

There were no other sources relied upon in determining and calculating costs and benefits.

VIII. Regulatory Analysis

Connection to sewer or installation of an on-site sewage system are options allowed by this rule. Considering that only one or the other cost will be incurred, estimates of costs have been determined for both options, but a homeowner will only need to incur one or the other of the costs, not both. The estimated costs for connection to sewer and an on-site sewage system cannot be combined to evaluate overall fiscal impact. The estimates for both options are above in Section VI. Cost Analysis.

There are many variables in both estimates, and in some cases the expenses on any one site could vary significantly. With the estimates for an on-site sewage system, the accumulated overall costs include all requirements, and in most instances, all costs would not apply to any one system. It is unlikely that all costs would be incurred on any one site very often. Therefore, it is extremely hard to predict overall costs, but if anything, these estimates err on the high side.

While costs are an important concern, the most valuable benefit of this rule revision will be better on-site sewage systems, increased longevity, better system maintenance, protection of investments, and fewer public health hazards created from failing on-site sewage systems. IDOH has determined that the benefits associated with these revisions will greatly outweigh the monetary costs of implementation.

The second biggest benefit from these rule revisions will be the consistency of regulation throughout the state. Inconsistency of regulations has been a concern for installers and legislators for many years. The Technical Review Panel and Indiana legislators have strongly encouraged IDOH to pursue this revision with a vision to protect homeowners, clarify consistent requirements, and offer options to homeowners, and IDOH feels that these rule revisions will fulfill that goal.

The proposed revisions will also fulfill the recent requirements of state statutes that mandate revision of the rule to keep current with standards and best practices of the industry as well as to incorporate more options for system owners and for difficult sites.

IX. Contact Information of Staff to Answer Substantive Questions

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X. Family Impact Assessment pursuant to Executive Order 13-05

a. This rule update will have no impact on

- the stability of the family or the marital commitment;
- nonmarital child-bearing;
- the rights of parents to raise their children and make the best choices about their children's education, health, and well-being; or
- private family earnings or the incentive for parents to provide materially for their children.

b. This rule will not send any messages to

- the public concerning the status of the family; or
- to children about the relationship between their present choices and future well-being.

XI. Resubmission Information

IDOH has attached a list of changes to the Proposed Rule language and incorporated a table outlining all of the proposed changes in Section IV. Changes for Proposed Rule. The document includes a list of the changes in the revised rule from the previously approved version, an explanation for the reason for the changes, and the Regulatory Analysis has been updated to describe how those changes impact the Regulatory Analysis previously submitted and approved.

Notice of Second Public Comment Period: [20260708-IR-410260064SNA](#)

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