

**DATA ENTRY MANUAL**

**SEALED TANK WITHOUT INFILTRATION STRUCTURE**

System: Fecal Sludge Management

Element: Containment

Component: Sealed Tank Without Infiltration Structure

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# INTRODUCTION

This manual is designed to help you enter all of the costs associated with procuring, installing and operating a **sealed tank without infiltration structure** component. A **sealed tank without infiltration structure** uses an impermeable tank that is not connected to an intentionally designed subsurface infiltration structure, such as an engineered soak pit or leach field. Although the definition focuses on the sealed tank, costs associated with the entire toilet unit should be reported here, including the user interface, superstructure and sealed tank. (Stumped on what we mean by component? See **INSIGHT 0.1**)

Examples of **sealed tank without infiltration structure** technologies include:

* Septic tanks that discharge to an open drain, sewer or ground surface
* Aqua privies
* Dehydration vaults, composting chambers, and other sealed vaults
* Urine-diverting dry toilets (UDDTs) with urine collected in a separate container or urine emptied to an open drain or sewer
* Fully lined pits where the walls and bottom are fully sealed and impermeable

***INSIGHT 0.1***

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| **Elements and components**  An *element* is a functional step of the sanitation value chain. Elements defined by CACTUS are: containment, emptying, transport, combined emptying and transport, and treatment.  A *component* is a cluster of technologies defined by CACTUS, which provide the functionality of a single *element*, have similar characteristics and are likely to have similar cost profiles.  This manual provides instructions for providing data for a **sealed tank without infiltration structure** *component,* which falls under the **containment** *element.* |

First, download and open a clean workbook for a **sealed tank without infiltration structure** component. Then follow the instructions below to fill in the required data on each of the five workbook tabs: context, direct CAPEX, indirect CAPEX, direct OPEX and indirect OPEX.

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# TAB 1: CONTEXT

Definition

The context tab provides information that applies to all costs in the data point for which you are reporting. Enter the requested information in the yellow boxes.

## GENERAL INFORMATION

Data to provide

* **Name of organization / business / utility / operation:** If you are entering data for a formal organization or business, enter the name here.
* **Description of organization / business / utility / operation:** Provide a brief description of your operation here. Possible examples include: 'Social enterprise conducting market research on local toilet costs' or 'Small business that builds and installs septic tanks'.
* **Description of sealed tank without infiltration structure component:** Provide a description of the specific component for which you are providing data. For example, 'A flush toilet shared within members of a household with a concrete superstructure, and connected by a PVC pipe to the sealed tank which does not have any intentional waste outlet'.
  + Even if your operation covers multiple stages of the sanitation value chain, this box should be used only to describe the **sealed tank without infiltration structure** component that you offer or operate.
  + Note that this workbook should only include the costs for a specific example of the component. For example, if you are an operator that sells and installs sealed tanks and also constructs urine-diverting dry toilets, you should fill out two separate workbooks, one for each example of a **sealed tank without infiltration structure** technology.
* **Year:**Enter the year that corresponds to the reported operating costs. For example, if the current year is 2020 and you are entering costs based on last year’s financial records, you should enter 2019.
* **Country:** Select the country where the toilets are located from the drop-down box
* **City**: Enter the name of the city where the toilets are located

## SERVICE INFORMATION

Definition

The service information helps us determine the number of people and households who depend on the containment units that are reported in this workbook, which is critical for calculating CACTUS’s key metrics: the total annual cost per capita (TACC) and total annual cost per household (TACH).

Data to provide

**Primary service parameters**

* **How many containment units are accounted for in the reported costs?** You have a choice to either report data for a single containment unit or for all units that your organization manages or has provided.
  + If reporting for a single containment unit, enter 1 in response to this question. In the following questions about the number of people and households that depend on the unit(s), provide the average number of people and/or households that depend on a single unit. All costs reported in the remainder of the workbook should then also correspond to the costs for a single unit.
  + If reporting for all units that your organization manages or has provided, enter that number here. In the following questions, report the total number of people and households that are served by all of the units.
  + Note that if you are a builder or installer of toilets and have indirect costs to report, then you should report for the total number of units managed or number of units produced in a year, rather than a single unit.
* **Number of people and households served:** There are three service parameters to enter in this section: *number of people served*, *number of households served*, and *number of people per household*. Number of people and households served should be based on the numbers served by the total number of containment units indicated in the question above. You should provide at least two of the parameters, and the remaining parameter can be calculated from the other two. For each parameter, enter:
  + **Value:** Enter the appropriate values for at least two of the three service parameters
  + **How value was determined:** Include any information about how you came to this value. If you know the value within a given range, you can provide the range here and then use the average of the range in the value column.

**Additional information broken down by toilet type**

The remaining questions are divided to ask separately about service data for private residential toilets, community residential toilets and public, commercial, or institutional toilets. Definitions for each of the toilet types are below. If one of the toilet types does not apply, you may leave that section blank. If you are reporting costs for only one containment unit, you will only fill in one of the sections below.

* **Private residential toilet:** Serves as the primary toilet for a discrete, specific group of households. It might be used by a single household or shared between multiple households
* **Community residential toilet:** Serves as a primary toilet for households but is available to any nearby household rather than privately owned or managed, such as a block of community toilets in a residential area
* **Public, commercial and institutional toilets:** Includes toilets at bus stations, markets, hospitals, schools, etc. These are toilets that are typically not a person’s primary toilet and may require payment to use.

# TAB 2: DIRECT CAPEX

## OVERVIEW

Definition

**Direct CAPEX** includes capital investments (either purchases or long-term leases longer than one year) into physical assets that are beneficial beyond one year and that directly contribute to the containment of waste. Note that for all containment components, we classify CAPEX and OPEX from the perspective of a toilet user or operator. Although this might not align with your specific business model, it is important to report costs based on the classifications we have assigned (Stumped? See **INSIGHT 2.1**).

***INSIGHT 2.1***

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| **CAPEX vs. OPEX**  For all containment components, costs are categorized from the standpoint of *operating* the component. This means that all costs associated with building, purchasing, and installing a toilet (consisting of a user interface, superstructure, and sealed tank) will be included as direct CAPEX, even if your specific business model might consider these costs to be OPEX.  Consider a household that purchases a sealed septic tank. From the perspective of the household (the operator of the toilet), the cost of purchasing and installing the tank is considered CAPEX. This is the simplest case that aligns with the classification of costs in this workbook.  Now consider a business that sells and installs sealed tanks. This business would normally consider the annual salaries for staff who sell and install the tanks to be OPEX. However, those costs contribute to production of the tanks, which would, ideally at least, be reflected in the cost incurred by a household to purchase the tank. We established in the first example that the cost incurred by a household to purchase the tank should be considered CAPEX. For this reason, we also consider the annual salaries for staff who manufacture and install tanks to be CAPEX.  We understand that this is confusing! Even if you do not completely understand why different costs are categorized as CAPEX vs. OPEX, the instructions in this manual should help you report your costs in the correct tabs. |

Common parameters

The following parameters to describe cost items are common throughout this tab. Any differences in these parameters seen in individual sections will be described separately in the corresponding section.

* **Cost per unit:** The cost or amount associated with one toilet unit(Stumped? See **INSIGHT 2.2**)
* **Number of units required:**The number of toilet units reported on the context tab (Stumped? See **INSIGHT 2.2**)
* **Currency:** Select the appropriate currency from the drop down box which should correspond to the currency specific to that particular cost. Different costs could have different currencies depending on how your organization reports these costs.
* **Confidence in cost estimate:** Indicate how confident you are in the reported cost. Answer choices include high confidence (approximately +/-5% from reported cost), fair confidence (approximately +/-15%), and low confidence (approximately +/-50% or more).
* **Indicate if cost is incurred but not reported:** Use an X from the drop-down menu to indicate if a cost that is incurred is not reported because it is not known or otherwise missing. If the cost is not reported because it is actually not incurred for your specific component, then you do not need to indicate that it is missing. This column helps us track missing costs for later data analysis.
* **Notes:** A more detailed description of what the cost item is or how the cost was determined. Any assumptions or calculations that were made to arrive at the cost estimate should be included here. Some examples are provided in the workbook. Erase these and write your own notes.

***INSIGHT 2.2***

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| **Unit cost and number of units required**  The definitions above represent the intended use of these columns; however, there are reallytwo possible ways to think about cost per unit and number of units required.  *Option 1:* The intended method, as described above, is to provide the cost associated with purchasing, building and installing one toilet as the **cost per unit** and then to enter the number of units needed to serve the indicated service population (i.e., number of people and households served) from the context tab as the **number of units required.** The **number of units required** in this case should be the same as the number entered under the ‘How many containment units are accounted for in the reported costs?’ question on the context tab.    *Option 2:* If you do not know direct CAPEX costs on a unit basis, and you entered a number greater than one for the number of units accounted for on the context tab, then you can enter the costs associated with purchasing, building, and installing all of the units under **cost per unit** and enter 1 for the **number of units required**.  With either option, if you multiply the **cost per unit** by the **number of units required**, you should obtain the total cost incurred for the total number of units reported on the context tab. |

## SECTION 1: PHYSICAL ASSETS

Definition

This section includes the costs for purchasing or producing the toilet and tank, including the superstructure, user interface and sealed tank.

Parameters

Additions and clarifications of the parameters specific to this section include:

* **Cost per unit:** Include all costs associated with manufacturing, purchasing and transporting the asset. You may enter the cost either inclusive or exclusive of taxes such as VAT. If the cost is inclusive of VAT or other taxes, indicate that in the notes column for each cost item. If the cost is exclusive of VAT or other taxes, provide the cost of those taxes separately in Section 5. Make sure to only include the taxes in one section to avoid double counting them.
* **Lifetime (years):** Indicate the estimated lifetime of the cost item in years. Estimates can be based on personal observations of asset lifetimes, estimates provided by vendors or values used for internal financial purposes. Default values are also provided in the description of each cost item below in case you are unable to determine an appropriate estimate, but a specific estimate for your component is preferred. The workbook only allows input of a single value in years. If you are working with a range, provide the average value as the lifetime, and indicate the expected range in the notes column. If possible, describe how the estimate was determined in the notes column, particularly if you use a default value.
* **Year purchased:** List the year that the item was purchased. Use an average if you are reporting on the costs of multiple toilets purchased over a span of multiple years.

Cost items

* **Superstructure:** Includes the housing around a toilet that provides privacy and protection to the user
  + If a toilet is located indoors within a dedicated space, then that space would be considered the superstructure. If the cost for that dedicated space is not known, for example because the cost was incorporated in the total cost of the house, then you should indicate that the cost for the superstructure is incurred but not reported by selecting the X in the appropriate drop-down box.
  + *Default values* for superstructure lifetimes are 10-15 years for a permanent outdoor superstructure, 1-5 years for a temporary outdoor superstructure, or can be 20-30+ years for a superstructure that is a dedicated space inside a home.
* **User interface**: Includes the type of toilet, pedestal, pan, squat plate or urinal with which the user comes in contact
  + *Default values* for the lifetime of a user interface are 5-15 years.
* **Sealed tank:** Includes the cost for the tank and any other materials needed to connect the sealed tank to the user interface or to connect the tank outlet to its discharge point, if applicable. Since this component is a **sealed tank *without* infiltration structure**, it might include materials to connect the outlet to an open drain, sewer, directly to the environment or another sealed tank.
  + This may include septic tanks which do not drain to a proper infiltration structure.
  + Some examples include aqua privies, dehydration vaults, composting chambers, sealed vaults or fully lined pits.
  + In some scenarios, the fecal waste will be directed to the tank while the urine will be emptied to an open drain or sewer as is the case with urine-diverting dry toilets (UDDTs).
  + *Default values* for the lifetime of a sealed tank is 15 to 40 years. If different materials included in this row have different lifetimes, enter an average lifetime.
* **Other or combined physical assets**: Provide the combined cost for all physical assets that are not included with one of the three items above, or you may use this row to report the combined cost for two or three of the items above if you do not know the costs individually.
  + Use an average lifetime value if multiple items are combined, ideally weighted by the cost of each item.

Frequently asked questions

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| **1. My business manufactures and sells septic tanks. How do I report the costs of my manufacturing equipment and staff?**  *The cost per unit should represent the entire cost of goods sold, which would include a normalized cost for all manufacturing equipment. Labour for manufacturing can either be included in the cost per unit or, preferably, reported separately in Section 2 or 3.*  **2. We import the squat plate for our toilet. Where do I report the fees associated with importation?**  *Report any customs fees or import tariffs under Section 5. Report the cost of purchasing the user interface and any transport, freight or shipping fees in this section on the row for the user interface.*  **3. I know the combined cost of my superstructure and user interface and the individual cost of the sealed tank. How do I enter those?**  *Enter the cost of the sealed tank in the designated row, leave the costs for superstructure and user interface blank (do NOT check the box indicating that they are incurred but not reported) and enter the combined cost for the superstructure and user interface as 'Other or combined physical assets'. In the notes column for 'Other or combined physical assets', indicate that the cost reflects the superstructure and user interface combined.*  **4. A majority of the costs or all of these costs are combined in our financial records. How should I enter these cost items?**  *Enter the combined cost of all of these items in the ‘other’ row. If you have an extra item whose costs are separate and doesn’t fall under any of the cost items highlighted in the other rows, you can also combine that cost with the other combined costs and report the total cost in the ‘other’ row. Be sure to describe all combined costs in the notes cell.* |

## SECTION 2: DAILY OR CASUAL LABOUR

Definition

Ifnon-salaried daily or casual labourers are hired to build or install toilets **and the costs associated with those labourers are not already included in the overall cost for the physical asset above**, they should be provided in this section. (Confused about why this is classified as CAPEX instead of OPEX? See **INSIGHT 2.1**)

Parameters

All parameters are described previously in the overview section.

Cost items

There is only one row to provide the total cumulative cost for casual labour used to build or install a toilet with containment. It should include the actual wages paid for labour plus any other fees paid such as travel or meal allowances, personal protective equipment and vaccinations. The costs are reported as the total costs required to produce and install one toilet unit with containment. Use the notes column to provide specific details about costs that are included. (Stumped? See **INSIGHT 2.2** in the previous section)

Frequently asked questions

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| **1. We do not hire casual labourers directly, but we pay an independent business to install our toilets as a service. Where do I report those costs?**  *The fees paid to a third-party installer can still be entered in this section because the third party is providing the labour for installation, and the fees cover the cost of that labour.*  **2. What if we have a contract to pay the independent operator a fixed monthly rate for all of our toilet installations, regardless of how many are installed? How do I report the cost per unit?**  *In this case, you should report the annual fees paid to the operator as a salary for installation staff in Section 3 and add a note that these are fees paid to an independent operator rather than staff you have hired directly.* |

## SECTION 3: SALARIED PRODUCTION OR INSTALLATION STAFF

Definition

If salaried staff employed on an annual or long-term contract are responsible for building, manufacturing or installing your toilets with sealed tank containment **and the costs associated with those staff are not already included in the overall cost for the physical assets above**, they should be provided in this section. (Confused about why this is classified as CAPEX instead of OPEX? See **INSIGHT 2.1**)

Parameters

There are two new parameters for this section:

* **Annual cost** is used instead of cost per unit and number of units required. Enter the total annual cost paid in salaries for the described staff.
* **Number of units produced in one year:** Provide the number of toilet units produced or installed that corresponds to the annual cost provided.

Cost items

The cost items are divided into two subsections: salaries and other expenses.

For salaries, cost items include:

* **Production or manufacturing staff:** Salaried staff who produce or manufacture all or part of the toilets and tanks
* **Installation staff:** Salaried staff who install the toilets and tanks
* **Other or combined salaried staff responsible for producing and installing toilets:** You might use this row if, for example, your staff includes both general workers and supervisors and you would prefer to list them separately. In that case, you can list the general workers in one or both of the previous lines and the supervisors here. Add a note to specify that the cost is for supervisors directly responsible for production or installation.

For all other expenses, the costs entered should only represent the costs to cover the staff included in salary reporting above. Cost items include:

* **Insurance:** Includes costs for all insurances and any other similar costs. Examples include health insurance, disability insurance and workers’ compensation.
* **Personal protective equipment (PPE):** Examples of PPE include boots, overalls, reflective vests, safety glasses, or any other other body protective gear. Only include costs incurred to provide PPE to staff who are responsible for producing or installing toilets and waste containment.
* **Vaccinations:** Includes all costs associated with annual vaccinations and other annual or routine health checks provided by the employer
* **Professional development and trainings:** Includes orientations, safety trainings, license renewals, and any type of certification programs funded by the employer
* **Other or combined expenses:** This row serves two different purposes.
  + First, if you know the cumulative costs of non-salary staff expenses but not the breakdown of the costs as given above, you can enter the cumulative cost here. Be sure to include the details of the combined items in the notes cell.
  + Second, if you incur any other non-salary expenses for production and installation staff that do not meet the criteria for one of the other cost items, you can enter it here. In the notes, describe what specific item(s) the cost covers.

## SECTION 4: MAJOR AND EXTRAORDINARY REPAIRS

Definition

Major and extraordinary repairs include any extensive repairs made to an asset that prolong its useful life beyond one year and have a materially significant value. Please note that if your organization reports a repair as OPEX, then you can report it as maintenance on the Direct OPEX tab rather than in this section, even if it otherwise meets the definition of a major and extraordinary repair.

***INSIGHT 2.3***

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| **Major and extraordinary repairs for individual vs. combined physical assets**  A major and extraordinary repair often (though not always) takes the form of replacing a part. For example, replacing the brakes on a truck would be considered a major and extraordinary repair for the truck. However, this is dependent on considering the truck as the physical asset. If you consider the brakes themselves as the physical asset, then the frequency at which they need to be replaced would be reflected by the lifetime, and replacing them would no longer be considered a repair.  Therefore, the extent to which you broke down costs for physical assets in Section 1 will impact how you report major and extraordinary repairs in this section. If you reported a single cost for the combined superstructure, user interface, and sealed tank, then replacing any one of these parts would qualify as a major and extraordinary repair. However, if you reported them individually, replacing the whole asset should not be listed in this section, as it is already reflected by the previously reported asset lifetime. Specific examples are included with the cost item descriptions. |

Parameters

The parameters in this section are the same as those in the physical assets section with one clarification:

* **Lifetime:** Here, lifetime indicates how frequently a repair is expected to be required in years. For example, if a superstructure door is usually replaced after 5 years, the lifetime would be 5.
* **Year cost was incurred:** Indicate the year when the reported cost was incurred.

Cost items

Major and extraordinary repairs should be reported according to the physical asset which requires the repair. Possible examples for each are described below:

* **Superstructure:**
  + If you reported an individual cost for the superstructure, then replacement of the superstructure roof or door would qualify as a major and extraordinary repair.
  + If you reported the cost of the superstructure combined with one or more of the other assets, then you could report replacing the superstructure itself as a major and extraordinary repair. (Stumped on why these two examples are different? See **INSIGHT 2.3**)
* **User interface:** 
  + If you reported an individual cost for the user interface, a major and extraordinary repair would be rare. However, replacing a cover or lid on the interface could be considered.
  + If you reported the cost of the user interface combined with one or more of the other assets, then replacing the entire user interface (for example, replacing the squat plate), would be considered a major and extraordinary repair. (Stumped on why these two examples are different? See **INSIGHT 2.3**)
* **Sealed tank:** 
  + If one of the sealed tank materials needs to be replaced on a significantly shorter timeline than the others, you can list the replacement of that item here. For example, if the sealed tank has a lifetime of 20 years but the pipe that connects from the user interface to the sealed tank has a lifetime of 5 years, you could list the lifetime of the sealed tank as 20 years and replacement of the pipe as a major and extraordinary repair with a lifetime of 5 years.
* **Other or combined major and extraordinary repairs:** Provide the combined cost for any major and extraordinary repairs that are not explicitly listed above, or you may use this row to report the combined cost for two or more of the items above if your financial records group those costs together. Include the details of the combined items in the notes cell, and use a weighted average for the lifetime value.

Frequently asked questions

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| **1.****How do I determine whether a cost should be classified as a major and extraordinary repair on this tab or as maintenance on the direct OPEX tab?**  *In general, if the cost of the repair is significant in relation to the overall cost of the asset, the repair extends the useful life of the asset by more than one year, and the repair occurs at a frequency of less than once per year, then it would be considered CAPEX and reported in this section as a major and extraordinary repair. However, if your organization records the cost as OPEX, then you can report it in the direct OPEX tab, regardless of whether it technically meets the definition for a major and extraordinary repair.*  **2. Should I report costs incurred for emptying the tank as a major and extraordinary repair?**  *No, emptying any containment structure is considered a separate component, classified under the emptying or combined empty and transport element, and should not be reported in this workbook.* |

## SECTION 5: TAXES AND FINANCING FOR PHYSICAL ASSETS

Definition

Taxes and financing for physical assets include any interest paid on a loan, commissions or fees paid to a lender or bank for the financing and taxes, which might include sales tax, value added tax (VAT) and import tax.

Parameters

All parameters are described previously in the overview section.

Cost items

Where possible, financing and costs should be reported for the individual physical asset for which they were incurred (i.e., the superstructure, user interface and sealed tank separately). However, if you have reported the combined cost of physical assets in previous sections or if you only know combined financing costs and taxes for all physical assets, you may report those in the rows for 'other or combined physical assets'. You may also use the row for 'other or combined physical assets' if you previously reported the cost for a physical asset that is independent from the superstructure, user interface or sealed tank.

For each asset, **financing costs** and **taxes** should be reported in separate rows:

* **Financing costs:** Includes the total interest paid on a loan plus any commissions and fees paid to a lender or bank
* **Taxes:** Examples include sales, VAT or import taxes paid for a physical asset

Frequently asked questions

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| **1.****My organization produces and sells toilets with sealed tank containments. We do not pay interest or financing fees on the toilets, but we did have to finance our manufacturing equipment that we use to produce the tanks. Do I report those financing costs here?**  *No, if you produce toilets, then any costs related to manufacturing them, including financing costs of manufacturing equipment, should be incorporated in the unit cost reported in Section 1. This is because we classify costs from the perspective of the* ***toilet operator*** *even if you are reporting as a* ***toilet manufacturer****. (Stumped? See* ***INSIGHT 2.1*** *and the FAQs in Section 1)*  **2. I have collected data and am reporting on the average costs that households pay for a toilet with sealed tank containment. They often purchase the toilets and tanks through microloans and pay some interest on those. Do I report those costs here?**  *Yes! The sum of interest paid and commissions or fees should be reported as a financing cost. If possible, break the costs down by the individual physical asset. If households typically finance a full unit inclusive of the superstructure, user interface and sealed tank, then report the financing costs under 'Other or combined physical assets'.*  **3.****The physical asset cost that I reported in Section 1 is inclusive of VAT. Do I need to report that cost separately in this section as well?**  *No, if the cost reported for a physical asset in Section 1 already includes VAT, you should leave the corresponding row for taxes here blank.* |

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# TAB 3: INDIRECT CAPEX

## OVERVIEW

Definition

**Indirect CAPEX** includes capital investments (either purchases or long-term leases longer than one year) into physical assets that are beneficial beyond one year and that **indirectly** contribute to the containment of waste, usually through the support of core business operations. (Stumped? See **INSIGHT 3.1 and INSIGHT 3.2**)

***INSIGHT 3.1***

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| **Direct vs. indirect costs**  **Guidance for determining whether a cost is direct or indirect**  Some cost descriptions are listed on both the direct and indirect cost tabs. To determine where a specific cost should be reported, consider the following questions:   * Is the item/service/staff member used only for this service? * Is it essential to deliver the service? If we eliminate it, would we be unable to operate the service?   If the answers to the questions above are yes, then it is likely a direct cost and should be reported on this tab.  Alternatively, consider:   * Does the item/service/staff member provide core business services that indirectly support the sanitation service? * Is the item/service/staff member shared across multiple services or different business activities?   If the answers to those questions are yes, then the cost is more likely an indirect cost. |

***INSIGHT 3.2***

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| **Who incurs indirect costs?**  This tab and the indirect OPEX tab will only apply to businesses or non-profit organizations who manufacture, install or otherwise provide toilets and waste containment for users and who have a central office and administrative functions. If you are reporting data collected about costs incurred by households to purchase and operate toilets and waste containment, there will be no indirect CAPEX or indirect OPEX costs to report. |

Common parameters

The following parameters to describe cost items are common throughout this tab. Any differences in these parameters seen in individual sections will be described separately in the corresponding section.

* **Cost:** Total cost for the described item
* **Fraction applied to shared costs:** The fraction of the reported total cost that should be applied to this component, which should be generated using the methodology described in the Appendix. The fraction should be entered as a decimal equal to or between 0 and 1. (Stumped? See **INSIGHT 3.3**)
* **Currency:** Select the appropriate currency from the drop down box which should correspond to the currency specific to that particular cost. Different costs could have different currencies depending on how your organization reports these costs.
* **Confidence in cost estimate:** Indicate how confident you are in the reported cost. Answer choices include high confidence (approximately +/-5% from reported cost), fair confidence (approximately +/-15%), and low confidence (approximately +/-50% or more).
* **Indicate if cost is incurred but not reported:** Use an X from the drop-down menu to indicate if a cost that is incurred is not reported because it is not known or otherwise missing. If the cost is not reported because it is actually not incurred for your specific component, then you do not need to indicate that it is missing. This column helps us track missing costs for later data analysis.
* **Notes:** A more detailed description of what the cost item is or how the cost was determined. Any assumptions or calculations that were made to arrive at the cost estimate should be included here.

***INSIGHT 3.3***

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| **Cost allocation between shared costs**  Indirect costs are often shared between multiple products or services that are offered by a business. For example, if your organization manufactures and sells both sealed septic tanks and infiltrating pit latrines, then indirect costs such as your office rent and accounting team salaries are likely shared between each of those components. For each cost item provided in this tab, determine the fraction of the total cost that should be applied to this component using the methodology described in the Appendix. |

Frequently asked questions

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| **1.** **I work for an NGO that has collected data and is reporting on the average costs that households pay for a specific type of toilet. Should I report the indirect costs incurred by my organization in this section?**  *No, this section is only applicable to businesses that produce or sell toilets. If you are reporting based on household costs, there are no indirect costs to report, and you may skip this tab.*  **2. My organization only produces sealed tanks without infiltration structures. We do not provide any other products or services. What do I enter for 'fraction applied to shared costs'?**  *If you only offer the service or product that is described in this workbook, then the ‘fraction applied to shared costs’ should be 1 for all indirect cost items.* |

## SECTION 1: PHYSICAL ASSETS

Definition

This section includes the purchase cost for physical assets that indirectly contribute to the containment of waste.

Parameters

Additions and clarifications of the parameters specific to this section include:

* **Cost:** Total cost for the described item. You may enter the cost either inclusive or exclusive of taxes such as VAT. If the cost is inclusive of VAT or other taxes, indicate that in the notes column for each cost item. If the cost is exclusive of VAT or other taxes, provide the cost of those taxes separately in Section 5. Make sure to only include the taxes in one section to avoid double counting them.
* **Lifetime (years):** Indicate the estimated lifetime of the physical asset in years. Estimates can be based on personal observations of asset lifetimes, estimates provided by vendors or values used for internal financial purposes. The workbook only allows input of a single value in years. If you are working with a range, provide the average value as the lifetime, and indicate the expected range in the notes column.
* **Year purchased:** List the year that the item was purchased. Use an average if you are reporting on the costs of multiple assets purchased over a span of multiple years, for example if you are reporting the cost for 5 vehicles that were purchased between 2018 and 2021.

Cost items

* **Land for office:** Includes the costs associated with purchasing or long-term leasing the land on which your office is built.
  + A long-term lease means that you pay for the lease at a frequency of less than once per year, for example if you pay upfront for a 25-year lease on the land.
  + If you are entering the cost of a long-term lease, report the frequency of payment as the lifetime. If you are reporting the cost for purchased land, use a default lifetime value of 100 years.
  + This cost typically only applies if you have built your own office. If you purchased or rent an office, it will be reported as 'purchase, construction or long-term lease of an office building' below (if a long-term lease with payment frequency less than once per year) or in the indirect OPEX tab.
* **Purchase, construction or long-term lease of an office building:** Includes all costs associated with purchasing, constructing or long-term leasing the office building.
  + For construction, the cost should include all labour and materials.
  + A long-term lease means that you pay for the lease at a frequency of less than once per year. If you rent your office and pay rent monthly or annually, the cost should be reported on the indirect OPEX tab.
  + If you are entering the cost of a long-term lease, report the frequency of payment as the lifetime. If you are reporting the cost for a purchased or constructed office building, use a default lifetime value of 40 years.
* **Office equipment:** Includes the costs associated with purchasing all equipment to be used in the office that are replaced at a frequency of less than once per year. This includes furniture, computers and all other electronic equipment used in the office.
  + The lifetime and year purchased should be averages of the multiple items included in this row. Ideally the average would be weighted based on the relative cost of each included item.
  + Use the notes column to describe specifically which items are included.
* **Vehicles:** Includes the combined cost for purchase of any vehicles used for general, sales and administrative purposes.
* **Other or combined physical assets:** Provide the combined cost for any physical assets that are not explicitly listed above, or you may use this row to report the combined cost for two or more of the items above if your financial records group those costs together. Use the notes column to provide more details about the items accounted for in the cost. For the lifetime of combined costs, use the average lifetime of the items, weighted by the individual item costs.

## SECTION 2: MAJOR AND EXTRAORDINARY REPAIRS

Definition

Major and extraordinary repairs include any extensive repairs made to an asset that prolong its useful life beyond one year and have a materially significant value.

Parameters

The parameters in this section are the same as those in the physical assets section with one clarification:

* **Lifetime:** Here, lifetime indicates how frequently a repair is expected to be required in years. For example, if your vehicles require a significant repair such as replacing the brakes every 3 years, the lifetime would be 3
* **Year cost was incurred:** Indicate the year when the reported cost was incurred

Cost items

Major and extraordinary repairs should be reported according to the physical asset which requires the repair.

* **Land for office:** Possible examples include excavation to improve stormwater drainage on the property or an overhaul of the property landscaping
* **Office building:** Possible examples include renovation of the office building or construction of a new staff kitchen
* **Office equipment:** A possible example is upgrading the CPUs of office computers
* **Vehicles:** Possible examples include replacing the vehicle brakes, transmission, or engine
* **Other or combined major and extraordinary repairs:** Use this row for any major and extraordinary repairs required for any other physical assets that you reported in the previous section or to report the combined cost of major and extraordinary repairs for multiple assets. Use the notes column to provide more details about the repair that is accounted for in the cost. For the lifetime of combined items, use an average lifetime, ideally weighted by the cost of each item.

## SECTION 3: TAXES AND FINANCING FOR PHYSICAL ASSETS

Definition

Taxes and financing for physical assets include any interest paid on a loan, commissions or fees paid to a lender or bank for the financing and taxes, which might include sales tax, value added tax (VAT) and import tax. Only taxes that are incurred from the purchase or initial lease transaction should be reported here. Annual taxes such as property taxes should be reported on the indirect OPEX tab.

Parameters

All parameters are described previously in the Overview section.

Cost items

Where possible, taxes and financing costs should be reported for the individual physical asset for which they were incurred. However, if you only know combined financing costs and taxes for all indirect physical assets, you may report those in the rows for 'other or combined physical assets'. You may also use the row for 'other or combined physical assets' if you reported the cost of a physical asset in the 'other' row in the previous sections of this tab.

For each asset, **financing costs** and **taxes** should be reported in separate rows:

* **Financing costs:** Includes the total interest plus any commissions and fees paid to a lender or bank
* **Taxes:** Examples include sales, VAT or import taxes paid for a physical asset

## SECTION 4: PROFESSIONAL DEVELOPMENT AND TRAINING

Definition

This section includes expenses incurred for one-time or infrequent staff trainings.

Parameters

* **Lifetime (years):** For a routinely held training (e.g., one that is held every two years), indicate the estimated frequency of the training in years. For a training that was held once when the company or service provider first began operations and is not expected to ever be repeated, you may enter a lifetime of 100 years.
* **Year cost was incurred:** Indicate the year when the reported cost was incurred

Cost items

* **One-time of infrequent staff training expenses**: Examples include single trainings that are held when a company or service provider first begins operations but that are not expected to be repeated or large trainings that are held routinely at a frequency less than once per year.

## SECTION 5: OTHER INDIRECT CAPEX

Any other capital investment into physical assets that occurs at a frequency of less than once per year, is needed to provide the core business activities that support transport, and does not fit into any of the other sections on this tab can be reported here. If there are multiple items that meet this description, the costs should be combined to report as a single item, and a weighted average should be used for the lifetime and year the cost was incurred. Use the notes column to describe what the item(s) are.

# TAB 4: DIRECT OPEX

## OVERVIEW

Definition

**Direct OPEX** includes costs required to use, operate or maintain the superstructure, user interface and sealed tank.

Common parameters

The following parameters to describe cost items are common in both sections of this tab:

* **Annual cost:** The cost incurred for each item over the course of a year
* **Currency:** Select the appropriate currency from the drop down box which should correspond to the currency specific to that particular cost. Different costs could have different currencies depending on how your organization reports these costs.
* **Confidence in cost estimate:** Indicate how confident you are in the reported cost. Answer choices include high confidence (approximately +/-5% from reported cost), fair confidence (approximately +/-15%), and low confidence (approximately +/-50% or more).
* **Indicate if cost is incurred but not reported:** Use an X from the drop-down menu to indicate if a cost that is incurred is not reported because it is not known or otherwise missing. If the cost is not reported because it is actually not incurred for your specific component, then you do not need to indicate that it is missing. This column helps us track missing costs for later data analysis.
* **Notes:** A more detailed description of what the cost item is or how the cost was determined. Any assumptions or calculations that were made to arrive at the cost estimate should be included here.

## SECTION 1: MAINTENANCE

Definition

This section includes all routine maintenance for physical assets reported in the direct CAPEX tab. Any major and extraordinary repairs that were reported in the direct CAPEX tab should not be reported here.

Parameters

All parameters are described previously in the overview section.

Cost items

Maintenance costs should be reported according to the physical asset for which it is incurred, either the superstructure, user interface, sealed tank or other physical assets. Similar to previously described sections, the row for other maintenance can be used either to describe maintenance for an asset not described by one of the other three items or to report maintenance that applies to two or more of the other assets combined. Examples for maintenance costs include annually repainting the superstructure or routine maintenance on the tank. In reality, maintenance costs for containment components are expected to be small or negligible so this entire section may be left blank in some cases.

Frequently asked questions

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| **Is emptying feces or urine from the sealed tank considered a maintenance expense?**  *No, emptying any containment structure is considered a separate component, classified under the emptying or combined empty and transport element.* |

## SECTION 2: CONSUMABLES FOR OPERATING TOILETS

Definition

This section includes the annual cost incurred for any materials or supplies that are routinely replaced.

Parameters

All parameters are described previously in the overview section.

Cost items

There is only one row provided for consumables, which is labeled **‘Other consumables’**. This row can be used to enter the combined annual cost for any consumables used to operate the toilet and tank containment.This might include cleaning agents and supplies for cleaning the user interface if the costs of those are tracked or chemicals that are used to prevent sludge accumulation in the tank.

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# TAB 5: INDIRECT OPEX

## OVERVIEW

Definition

**Indirect OPEX** consists of routine expense items or operational costs that **indirectly** support fecal sludge management services. These are most often costs that support core business activities. (Stumped on the difference between direct and indirect costs? See **INSIGHT 3.1** for the indirect CAPEX tab)

Common parameters

The following parameters to describe cost items are common throughout this tab. Any differences in these parameters seen in individual sections will be described separately in the corresponding section.

* **Annual cost:** The cost incurred for each item over the course of a year
* **Fraction applied to shared costs:** The fraction of the reported cost that should be applied to this component, which should be generated using the cost allocation methodology described in the Appendix. The fraction should be entered as a decimal equal to or between 0 and 1. (Stumped? See **INSIGHT 3.2** for the indirect CAPEX tab)
* **Currency:** Select the appropriate currency from the drop down box which should correspond to the currency specific to that particular cost. Different costs could have different currencies depending on how your organization reports these costs.
* **Confidence in cost estimate:** Indicate how confident you are in the reported cost. Answer choices include high confidence (approximately +/-5% from reported cost), fair confidence (approximately +/-15%), and low confidence (approximately +/-50% or more).
* **Indicate if cost is incurred but not reported:** Use an X from the drop-down menu to indicate if a cost that is incurred is not reported because it is not known or otherwise missing. If the cost is not reported because it is actually not incurred for your specific component, then you do not need to indicate that it is missing. This column helps us track missing costs for later data analysis.
* **Notes:** A more detailed description of what the cost item is or how the cost was determined. Any assumptions or calculations that were made to arrive at the cost estimate should be included here.

## SECTION 1: SALARIES

Definition

This section includes the salaries or wages paid to staff who indirectly support fecal sludge management services through core business activities.

Parameters

The parameters in this section are the same as those in the overview section.

Cost items

* **Sales and marketing staff:** Includes salaries paid for the sales and marketing team
* **Customer support and call centre staff:** Includes salaries paid for staff who provide customer support or staff a call centre to field requests from customers and schedule services
* **All other or combined indirect staff:** Includes combined salaries for any other office personnel (e.g., human resources, IT, accounting, finance, government relations and others), executives or other staff (e.g., government relations, research and development, external relations) who indirectly support the activities reported in this workbook. If it is simpler to combine sales, marketing, customer support and call centre staff here with the others, you may do so. Use the notes column to provide details about the type and number of staff if possible.

## SECTION 2: OTHER EXPENSES FOR INDIRECT STAFF

Definition

This section includes the annual expenses that are incurred on behalf of all indirect staff for items such as insurance and vaccinations that are not included in salaries. Note that the costs reported here should only reflect those incurred for indirect staff as similar costs for direct staff are reported elsewhere.

Parameters

All parameters are described previously in the overview section.

Cost items

* **Insurance:** Includes the combined costs for all insurances and other similar items. Examples include health insurance, disability insurance, workers’ compensation and social security if those are not previously included in the reported salary.
* **Annual vaccinations**: Includes annual costs associated with vaccinations and other annual or routine health checks provided for indirect staff
* **Other or combined staff expenses**: Provide the combined cost for any expenses that are not explicitly described above, or you may use this row to report the combined cost for two or more of the items above if your financial records group those costs together. Be sure to include the details of the included items in the notes cell.

## SECTION 3: PROFESSIONAL DEVELOPMENT AND TRAINING

Definition

This section includes all annual expenses incurred for professional development and staff training.

Parameters

All parameters are described previously in the overview section.

Cost items

* **All annual professional development and staff training**: Includes orientations, safety trainings, staff certification programs, and any annual staff development funds provided by the employer.

## SECTION 4: EQUIPMENT, LAND AND BUILDINGS

Definition

This section includes all indirect costs incurred for equipment, land and buildings. Costs can include routine maintenance, rent, or replacement of times if done on a routine basis.

Parameters

All parameters are described previously in the overview section.

Cost items

* **Office building:** Includes the office building rent if the building is not fully owned or long-term leased and any operational expenses for upkeep of the office that are not included elsewhere
* **Land:** Includes all rent or other operational expenses for land. This might be used if you pay rent specifically for the land that the office is built on, separate from the office itself. If there are multiple pieces of land that you incur annual costs for, you should enter the combined cost for all land here.
* **Office equipment:** Includes rent, maintenance, upkeep or routine replacement for office equipment such as computers, phones, desks, and chairs
* **Vehicles:** Includes rent, maintenance and upkeep on general use vehicles. These are vehicles used for general staff transportation and should not include any vehicles used directly for transportation of waste.
* **Other operational costs for buildings:** Include the combined cost for any annual expenses paid for buildings that should be classified as an indirect expense and are not the office building. This might include storage buildings or a warehouse.
* **Other or combined operational costs for equipment:** Include the combined cost for any annual expenses for equipment that were not included in the lines for office equipment or vehicles above.

## SECTION 5: CONSUMABLES

Definition

This section includes annual costs for items that are regularly consumed and replaced and that are considered indirect costs.

Parameters

All parameters are described previously in the overview section.

* **Utility expenses:**Includes utility expenses paid for the office such as water, electricity and internet. Input the cumulative utility expenses in this row and indicate the utilities that are included in the notes column.
* **Office supplies:** Includes any expenses associated with regularly purchasing consumables used in the office or to produce marketing materials such as paper, printer ink, pens, whiteboard markers, etc.
* **Fuel for general use vehicles:** Includes total annual expenditures on fuel for general use vehicles. Any fuel purchased for vehicles that directly provide waste transportation services, such as trucks used to transport waste to disposal or treatment, should not be reported here.
* **Other or combined consumable expenses:** Provide the combined cost for any consumables that are not explicitly described above, or you may use this row to report the combined cost for two or more of the items above if your financial records group those costs together. Be sure to include the details of the included items in the notes cell.

## SECTION 6: SERVICES

Definition

This section includes fees paid for professional services that support the fecal sludge management services offered by an organization

Parameters

All parameters are described previously in the overview section.

Cost items

* **Insurance:** Includes any insurance fees paid that are considered indirect expenses, excluding the insurance payments for employees which are included as staff expenses. Examples of insurance include fire insurance for the office building and liability insurance for the business.
* **Legal:** Includes fees paid to legal advisors for any legal processes required to operate the organization
* **Financial:** Includes any fees associated with financial advisory services received. Note that financing costs, such as interest on loans, are not included in this section.
* **Marketing:** Includes any fees paid for marketing services that are not already included as office supplies. This might include fees paid for radio advertisements or fees paid to a professional marketing firm.
* **Consulting or advisory:** Includes any fees associated with professional advisory or consulting services that are not considered financial, legal or marketing
* **Other or combined services:** Provide the combined cost for any professional services that are not explicitly listed above, or you may use this row to report the combined cost for two or more of the items above if your financial records group those costs together. Be sure to include the details of the included items in the notes cell.

## SECTION 7: ADMINISTRATIVE FEES, TAXES AND FINANCING

Definition

This section includes annual costs for licenses, permits, taxes, and financing charges that are not already accounted for in one of the CAPEX tabs.

Parameters

All parameters are described previously in the overview section.

Cost items

* **All administrative charges and permits considered indirect operating expenses:** Includes any administrative fees, licenses (including software licenses and general business licenses) and professional memberships for employees or for the organization
* **Annual taxes:** Includes any taxes paid annually that are not included elsewhere, such as property tax or income tax for a business
* **Annual financing charges:** Includes annual financing charges that are not already accounted for in one of the CAPEX tabs