

**DATA ENTRY MANUAL**

**EMPTYING AND TRANSPORT: CONTAINER-BASED SANITATION**

System: Fecal Sludge Management

Element: Emptying and Transport

Component: Container-Based Sanitation Emptying and Transport

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# INTRODUCTION

This manual is designed to help you enter all of the costs associated with procuring, installing and operating a **container-based sanitation combined emptying and transport component**. A **CBS emptying and transport component** includes replacing full containers with empty containers, emptying waste from sealable containers and transporting waste to a treatment facility using either motorized or non motorized means of transportation.(Stumped on what we mean by component? See **INSIGHT 0.1**)

Examples of **CBS emptying and transport** components include services operated by CBS providers, which typically include some or all of the following:

* Replacing a full CBS container with an empty and clean container (either by traveling to the site of the CBS containment or having users travel to a designated location).
* Transporting sealed, excreta-filled containers to a treatment or disposal site.
  + Single-stage transport places containers directly into a transport vehicle.
  + Two stage transport uses hand carts, then consolidates the containers at a collection depot before placing them into a larger transport vehicle.
* Emptying and cleaning containers for continued use

Although the definition focuses on the emptying and transport aspect, costs associated with collecting containers from households, consolidating waste at a transfer station (if used), transporting waste to a treatment facility, emptying and cleaning containers, and returning clean containers to users should be included.

***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 **CBS emptying and transport** *component,* which falls under the **emptying and transport** *element.* |

# 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 light 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: ‘Full-value chain container-based sanitation provider’ or ‘Local business that replaces full CBS containers with empty and clean containers and transports the waste to a treatment facility’.
* **Description of a CBS emptying and transport component:** Provide a description of the specific component for which you are providing data. For example, ‘Locally employed teams travels to households twice weekly to deliver clean, empty containers, remove full containers, and transport full containers to a transfer station using handcarts’
  + If your operation covers multiple stages of the sanitation value chain, this box should be used only to describe the **CBS emptying and transport** component that you offer or operate.
* **Year:**Enter the year that corresponds to the operating costs that you are entering. 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 dropdown box
* **City**: Enter the name of the city where the toilets are located

## SERVICE INFORMATION

The service information helps us determine the number of people and households who depend on the the emptying and transport services 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). There are four parameters to enter in this section: *number of containment units (i.e., number of CBS toilets) serviced by the emptying and transport operation, number of people served*, *number of households served*, and *number of people per household*. If you do not know the *number of households served* or an average *number of people per household,* you may leave one of those parameters blank. Use the column titled “How was value determined” to add any notes about how you determine the number of people and households served or uncertainty in your responses.

# 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 purchase equipment used to collect full containers from users, empty and clean them, and transport the waste to a treatment site. These investments are broken into three categories: (1) physical assets, (2) major and extraordinary repairs and (3) taxes and financing fees.

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:** The cost incurred for the described item.
* **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: PHYSICAL ASSETS

Definition

This section includes the costs for purchasing physical assets required to empty and transport fecal sludge.

Parameters

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

* **Cost:** Provide the amount paid for 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 3. 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 items purchased over a span of multiple years.

Cost items

* **Carts or wheelbarrows:** Includes the combined costs for all carts of wheelbarrows used to transport containers. This includes both small carts pulled by hand and larger carts or trailers that may be pulled by an animal or vehicle, and can include transport to a transfer station and/or to a treatment or disposal site.
  + *Default values* for the lifetime of simple carts/wheelbarrows are 1-5 years, while a more formal trailer might have a longer lifetime.
* **Small motorized vehicles (e.g., auto-rickshaws, motorbikes, tuk tuks)**: Includes all small motorized vehicles that are used to transport containers to a transfer station or to a disposal or treatment site.
  + Average lifetime values vary significantly depending on the type of transport vehicles used.
* **Large motorized vehicles (e.g., pickup or other type of truck):** Includes all large motorized vehicles that are used to transport containers to a transfer station or to a disposal or treatment site.
  + Average lifetime values vary significantly depending on the type of transport vehicles used.
* **Waste storage containers (e.g., barrels used to consolidate waste at the transfer station):** Includes the combined costs for all containers *other than the containers used within private or shared containments* used to contain the waste for transport. In this context, waste storage containers would most commonly be used to consolidate waste for transport to the treatment or disposal site so that containers used within containments can be cleaned at the transfer station and returned to households more quickly than if this was done at the treatment or disposal site
  + Default values for the lifetime of a waste storage container are 1-4 years.
* **Land for transfer station (if purchased or long-term lease)**: Includes the costs associated with purchasing or long-term leasing the land on which your transfer station is built.
  + Leave this line blank if your CBS emptying and transport service does not use a transfer station, rents the transfer station or land on a monthly basis (or other time horizon less than one year), or purchased or leases a pre-constructed transfer station.
  + 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.
* **Construction, purchase, or long-term lease of transfer station:** Includes the total costs associated with constructing, purchasing, or long-term leasing a transfer station. If constructing, this includes all labour and material costs.
  + Leave this line blank if your CBS emptying and transport service does not use a transfer station or rents the transfer station on a monthly basis (or other time horizon less than one year).
  + 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 of construction or purchase of the site, you may use a default lifetime value of 40 years or estimate the appropriate lifetime relevant to your context.
* **Other or combined physical assets:** Provide the combined cost for any physical assets 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.
  + 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. We operate multiple services which share some of the physical assets listed above (e.g., trucks, land). How should I indicate that costs are shared among other services not covered here?**  *You should only report costs associated with the CBS emptying and transport component in this workbook, which requires you to allocate or divide the costs. You can use the cost allocation methods for indirect costs that are described in the Appendix for guidance on how you might allocate a portion of the total cost to the CBS emptying and transport component. For example, if trucks are used for both the CBS emptying and transport service and for delivering container-based toilets, you can use the approximate fraction of time that the trucks are used for each service to allocate the total cost.*  **2. My business utilizes animals to transport collected containers on carts. Where do I include these costs?**  *Animal related costs should be handled using the ‘other’ row in the appropriate section and tab. If you purchased the animal, include the initial cost in the direct CAPEX tab as a physical asset. Report all operating costs (veterinary care, food, etc.) under the maintenance or consumables sections in the direct OPEX tab. If an animal is rented or leased, include the cost in Section 6 (rentals) in the direct OPEX tab.*  **3. 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: 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.

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 the transmission on a transport vehicle is usually replaced after 15 years, the lifetime would be 15.
* **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:

* **Carts/wheelbarrows:** Replacing a damaged axleor replacement of all tires
* **Small motorized vehicles (e.g., auto-rickshaws, motorbikes, tuk tuks):** Replacement of brakes or transmission
* **Large motorized vehicles (e.g., pickup or other type of truck):** Replacement of brakes or transmission
* **Transfer station:** Replacing the gate or fence
* **Other or combined physical assets:** 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 as maintenance in the direct OPEX tab, regardless of whether it technically meets the definition for a major and extraordinary repair.*  **2. What if one of the physical assets requires two types of major and extraordinary repairs?**  *In this case, you can report one of the repairs in the appropriate row for the physical asset and the other in the row for 'other physical assets'. In the unlikely case that you have two types of major and extraordinary repairs for one asset AND a major and extraordinary repair for an 'other' asset, you can report the sum of the costs for the two repairs for the single asset in the appropriate row and use an average lifetime (ideally a weighted average based on the costs).* |

## 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.

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 (i.e., land for transfer station, transport vehicles, etc separately). However, 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'.

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

Frequently asked questions

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| **1.****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.*  **2. I received a waiver for VAT for the purchase of my equipment. How should I indicate that in my reporting?**  *This is a great example for indicating that a cost should be incurred but is not reported. If you received a waiver for VAT but reasonably expect that similar operators in the future would have to pay taxes on the equipment, then you should mark the cell for ‘Indicate if cost is incurred but not reported’ with an X in the taxes row for the appropriate physical asset.* |

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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 emptying and transport of waste. (Stumped? See **INSIGHT 3.1**)

***INSIGHT 3.1***

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| **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. |

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 that is incurred by the operation or business
* **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 3.2**)
* **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.

***INSIGHT 3.2***

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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 installs container-based toilets in addition to operating the CBS emptying and transport service reported in this workbook, then indirect costs such as your office rent and finance team salaries are likely shared between those two services. For each cost item provided in this tab, report the total cost that is incurred by your organization and then determine the fraction of the total cost that should be applied to this component using the methodology described in the Appendix. |

## SECTION 1: PHYSICAL ASSETS

Definition

This section includes the purchase cost for physical assets that indirectly support the emptying and transport service.

Parameters

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

* **Cost:** Provide the amount paid for 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 3. 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.
* **General use vehicles:** Includes the combined cost for purchase of any vehicles used for general, sales and administrative purposes.
  + Note that these do not include vehicles used for transportation of waste. If a vehicle is sometimes used for both, list it only in the direct CAPEX tab.
* **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 three 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
* **General use 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 or 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 all operational costs that **directly** contribute to provision of CBS emptying and transport services. (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:

* **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: SALARIES

Definition

This section covers wage costs for all direct staff (i.e., staff directly involved in the CBS emptying and transport operation) who are employed on an annual or long-term contract. Do not report wages for staff who are paid on a casual, temporary or commission basis in this section, as these should be reported in Section 2.

Parameters

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

Cost items

* **Staff responsible for collecting containers**: Includes staff directly involved in the collection of full containers, delivery of clean, empty containers, and consolidation of waste into larger containers.
* **Staff responsible for washing containers (if different from collectors)**: Includes staff responsible for washing containers if this is a separate staff position from above.
* **Supervisors or managers:** Includes site or staff managers responsible for collection, emptying, and washing operations
* **Drivers**: Includes salaried drivers of any vehicles used for transport of containers to transfer stations and/or to disposal/treatment site if dedicated drivers - as distinct from collectors - are employed
* **Other or combined staff directly responsible for emptying and transport**: If you pay any salaries for staff that do not match the descriptions for one of the above types, you can enter it here, or you may use this row to report the combined cost for two or more staff types if your financial records group them together. Use the notes column to provide more details about the items accounted for in the cost.

Frequently asked questions

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| **1. What is the difference between salaries in this section versus wages paid on a variable basis, and why are they reported separately?**  *Salaried staff include those who are employed on an annual or longer term contract and are paid a consistent wage regardless of how many toilet or containment facilities are serviced so their costs are fixed for a given year. Wages paid on a variable or casual basis include those for workers who are hired and paid on a daily or weekly as-needed basis and those who are paid by commission. In both cases, the wages paid will vary depending on the number of containment facilities serviced. These variable costs should be reported in Section 2 instead of Section 1.*  **2. How do I account for salaried staff who serve multiple functions, such as installing toilets and collecting full containers as part of our emptying and transport service?**  *In this case the costs span multiple components, a container component and a CBS emptying and transport component (see INSIGHT 0.1 for clarification on the term ‘component’). You should only report costs associated with the CBS emptying and transport component in this workbook, which requires you to allocate or divide the costs for the described staff’s salary and other expenses. You can estimate the fraction of the total cost that should be reported here based on the approximate fraction of time spent on installation versus the emptying and transport service. For example, if a staff member on this team spends an average of 5 days per month installing toilets and 15 days per month providing emptying and transport service, then 75% (15 days out of 20 total) of the total salary and other expenses should be reported here. You should apply the same allocation to both the salary and any ‘other expenses’ reported for this staff.* |

## SECTION 2: VARIABLE STAFF PAYMENTS

Definition

This section covers costs for workers who perform emptying and transport services and are hired and paid on a daily or weekly as-needed basis and those who are paid by commission.

Parameters

All parameters are described previously in the overview section.

Cost items

* **Wages or commissions paid to staff on a variable or casual basis:** Includes all wages paid over the course of the year for casual labor or for workers paid by commission who assist in exchanging containers, washing containers, loading for transportation, and/or transporting waste to the final destination.
* **Other variable staff costs:** Includes any additional costs for staff that would vary depending on the number of containment facilities serviced in a given week or month. This might include short-term insurance for casual workers, phone credit, or meals purchased on a variable basis. Use the notes column to provide details about which costs are included.

## SECTION 3: FIXED NON-SALARY STAFF EXPENSES

Definition

This section includes the fixed annual expenses that are incurred on behalf of all direct staff and workers for items such as insurance costs and vaccinations that are not included in their salaries.

Parameters

All parameters are described previously in the overview section. The annual costs reported here should reflect the total annual cost incurred for all staff.

Cost items

* **Insurance:** Includes 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 by the employer
* **Other or combined expenses**: Provide the combined cost for any expenses that are not explicitly listed above, or you may use this row to report the combined cost for insurance, vaccinations and any other staff expenses if your financial records group those costs together. Use the notes column to provide more details about the items accounted for in the cost.

Frequently asked questions

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| **What is the difference between “other costs” in Section 2 (Variable Staff Payments) versus Section 3 (Fixed Non-Salary Staff Expenses)?**  *The primary difference is whether you would consider the cost as fixed or variable. If the cost is generally fixed for the year, then enter it in Section 3. If it is likely to change based on short-term (weekly or monthly) changes in the number of containment facilities that you service, then enter it in Section 2.* |

## SECTION 4: EQUIPMENT, LAND AND BUILDINGS

Definition

This section includes all direct annual costs incurred for equipment, land and buildings, which can include routine maintenance, rent, or replacement of items if done on a routine basis. Any costs already reported for equipment, land and buildings in the direct CAPEX tab should not be repeated here.

Parameters

All parameters are described previously in the overview section.

Cost items

* **Carts or wheelbarrows**: Includes rent, routine replacement or routine maintenance for all carts or wheelbarrows used for transporting waste
* **Small motorized vehicles (e.g., auto-rickshaws, motorbikes, tuk tuks)**: Includes rent, routine replacement or routine maintenance for all small motorized vehicles used for transporting waste
* **Large motorized vehicles (e.g., pickup or other type of truck)**: Includes rent, routine replacement or routine maintenance for all large motorized vehicles used for transporting waste
* **Transfer station**: Includes rent or routine maintenance for transfer station(s) if used
* **Other or combined operational costs for equipment**: If you pay any operational expenses (rent, routine replacement or routine maintenance) for equipment that is not explicitly listed above, you may enter it here. You may also use this row to report the combined costs for any of the equipment listed above if you track the combined, rather than individual, cost. In the notes column, describe the cost types that are covered.
* **Other operational costs for land:** If you pay any operational expenses for land that is directly used for the emptying and transport service and is not covered by one of the other items above, you may enter it here. Use the notes column to describe how the land is used and what the cost covers.
* **Other operational costs for buildings:** If you pay any operational expenses for buildings that are directly used for the emptying and transport service and are not covered by one of the other items above, you may enter them here. Examples might include rent for buildings used to store waste storage containers that are separate from a transfer station. Use the notes column to describe how the buildings are used and what the cost covers.

## SECTION 5: CONSUMABLES

Definition

This section includes annual costs for items that are regularly consumed and replaced and that directly contribute to the emptying and transport operation, such as fuel for vehicles that transport containers.

Parameters

All parameters are described previously in the overview section.

Cost items

* **Personal protective equipment (PPE)**: Includes boots, overalls, reflective vests, safety glasses, gloves and any other protective gear used by workers
* **Fuel**: Includes fuel used to transport full containers or waste to the transfer station or disposal/treatment site
* **Lubricant**: Includes motor oil, pipe grease and other similar products used for transport vehicles
* **Cleaning supplies**: Includes chemicals such as bleach and disinfectants and supplies such as mops and buckets that are used for cleaning transport vehicles, bags and containers
* **Water:** Includes water used for cleaning waste containers or the transfer station
* **Electricity (at transfer station):** Includes the cost of electricity used to run the transfer station
* **Other or combined consumables**: Provide the combined cost for any consumables 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.

## SECTION 6: SERVICES

Definition

This section includes annual costs paid for professional services that are essential to deliver the emptying and transport service.

### 

Parameters

All parameters are described previously in the overview section.

Cost items

* **Transportation service for sanitation waste:** If a third party is paid to transport sanitation waste (feces, urine, or both) away from a transfer station to a treatment or disposal point, include that cost here. If this option is used, your organization might not have drivers or transportation vehicles yourselves, and those rows can be left blank above.
* **Transportation, disposal or incineration services for managing solid waste (i.e., trash):** If a third party is paid to manage trash that is collected with sanitation waste, include the cost here. This might include collection of trash, transportation to disposal and disposal or incineration fees.
* **Maintenance services:** Any maintenance services that are paid to a third party can be provided here if they were not already included in the equipment operating expenses above.
* **Insurance that qualifies as a direct expense:** This would primarily include insurance required for transportation vehicles that are essential to deliver the emptying and transport services. If your organization records all insurance costs together and some are considered indirect expenses, then you may leave this blank and report all insurance costs on the indirect OPEX tab.
* **Other or combined services**: If you pay for any services that are not explicitly included above, you may provide those costs here. You may also use this line if you prefer to report the cost of any or all services above as a single combined cost.In the notes, describe the costs that are covered.

***INSIGHT 4.1***

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| **Revenue streams or fees paid between different sanitation actors**  In order to reduce variability caused by differences in organization and structure of different sanitation systems, the CACTUS method assumes that all elements of the sanitation value chain are operated by a single virtual operator. While this rarely occurs in real life, the important practical implication of this assumption is that any financial transactions between sanitation operators in different elements of the sanitation service chain should generally not be included in cost reporting. For example, if someone responsible for CBS emptying and transport services pays a fee to the treatment plant to discharge the waste (i.e., a tipping fee or waste offtake fee), that transaction or cost will not be reported. This is because the fee paid to the treatment facility is used to offset the cost of treatment, and treatment costs would be reported as part of a separate treatment component. Similarly, transactions between households and operators providing emptying and transport services are also not reported.  However, if a fee is paid between actors *within the same element*, and it is reasonable to assume the fee represents the actual cost of providing the service, then it can be included. For example, this component falls under the emptying and transport element, which means it should include all costs for emptying and transporting waste. If a fee is paid to a third party to transport the collected waste to a treatment facility, then that fee can be reported here as the cost for transportation. |

## SECTION 7: ADMINISTRATIVE CHARGES AND PERMITS

Definition

This section includes annual costs paid for administrative charges and permits that are considered direct operating expenses. Examples include annual registration for transportation vehicles and annual permits required to manage waste. There is only one row in this section, which can be used to report the combined cost for all costs that match this description. Use the notes column to describe the costs that are covered.

# 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