



TOOL SUITE

Total Cost
of Stewardship:
Cost Estimation Tools Manual

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MEMBERS OF THE COLLECTION BUILDING AND OPERATIONAL IMPACTS WORKING GROUP

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Overview

Introduction

In 2021, OCLC Research Library Partnership's Collection Building and Operational Impacts Working Group⁷ released a body of material designed to support archives and special collections in making informed, shared collection building decisions that bring together collection management and collection development considerations, and support communication between colleagues in curatorial, administrative, and technical services roles. This body of material includes:

- The OCLC Research report: *Total Cost of Stewardship: Responsible Collection Building in Archives and Special Collections*⁸
- An annotated bibliography of related resources⁹
- A Total Cost of Stewardship (TCS) Tool Suite, comprising a set of Communication Tools¹⁰ and a set of Cost Estimation Tools¹¹

The Cost Estimation Tools, in tandem with the Communication Tools, comprise a comprehensive tool suite designed to support working within the Total Cost of Stewardship Framework, a holistic approach to understanding resources needed to responsibly acquire and steward archives and special collections. The tools in the suite are designed to complement and be used in conjunction with each other. An institution may use one or all of the tools, as is most useful to their circumstances.

This manual provides guidance and instructions for using the two Cost Estimation Tools that are a part of the TCS Tool Suite:

- **Operational Impact Estimator:** This tool allows you to map institutional staffing and budgetary capacity for collection stewardship activities and then assess how work on a specific collection or potential acquisition might impact that capacity. It is designed to help consider both the costs of the work necessary to responsibly care for a collection and the impact to an institution's total annual capacity for collection stewardship work.
- **Quick Cost Estimator:** This tool is simpler and allows you to make broad estimations of the time required to catalog or process materials in archives and special collections. Calculations are based on existing, widely accepted schemas for time estimation for bibliographic cataloging and archival processing.

Both Cost Estimation Tools are intended to support decision-making and communication by the broad range of stakeholders who are involved in collection acquisition work. The data they generate can also be used to inform conversations with donors, granting agencies, and administrators when discussing the funds necessary for collection stewardship.

The Cost Estimation Tools are meant to provide estimates, not exact predictions of costs or time. They are designed to allow for flexible data input so that estimates can be as broad or specific as is feasible and useful. They are also intended to be used iteratively to provide both a broad estimate at early stages with minimal information and a more detailed estimate as more is understood about collection needs, size, or potential staffing assignments.

How to Use

DATA AND PRIVACY

The Cost Estimation Tools are intended to be downloaded and used on your local computer. OCLC is not collecting, nor does it have a mechanism to collect, any of the data you enter into any of the spreadsheets. They are offered as-is, without any warranty. Feedback on the tools may be sent to OCLC Research Library Partnership Sr. Program Officer Chela Scott Weber via the OCLC website <https://www.oclc.org/research/people/weber-chela-scott.html>.

ACCESSING

The Cost Estimation Tools are Microsoft Excel files. They can be downloaded on the OCLC Research Website using the following links:

- **Operational Impact Estimator:** <https://www.oclc.org/content/dam/research/publications/2021/oclcresearch-total-cost-of-stewardship-operational-impact-estimator.xlsx>.
- **Quick Cost Estimator:** <https://www.oclc.org/content/dam/research/publications/2021/oclcresearch-total-cost-of-stewardship-quick-cost-estimator.xlsx>.

BEFORE YOU BEGIN

The Cost Estimation Tools are designed to offer flexibility in how you would like to approach using them, especially regarding the specificity of calculations and the scope of work to be represented. Read through the instructions fully before use to inform how you would like to use each tool and what information you will need to include. We recommend that you have both estimator tools open to follow along as you read this manual.

To make the process easier and the tools most useful, gather the necessary information before you begin filling them out. You can estimate if you don't have exact figures, but the Cost Estimation Tools will require at least a general sense of the information outlined below.

Operational Impact Estimator (OIE):

The OIE requires detailed information about staffing, budgets, and the work you want to do.

Gather the following information about your institutional capacity:

- Staff types: the distinct categories and job titles of the positions that work on collection stewardship activities that you wish to include
- Salary or hourly pay rate and fringe benefit rates for those positions
- An estimation of the percentage of time those positions devote to collection stewardship work
- Annual paid time off accruals for salaried and hourly staff
- Annual budgeted amounts for supplies, transportation, vendor services, and other budget line items that support collection stewardship activities

Gather the following information about the collection you are addressing:

- An evaluation of the work that will be required on the collection
- An assessment of which positions will do the work required
- An estimate of how long the required work will take

Quick Cost Estimator:

The Quick Cost Estimator worksheets require some basic information about the materials you are working with and the work you want to do:

- The size, in linear feet, of the archival collection to be processed
- The number of items that require bibliographic records
- The level of detail/effort you anticipate will be required in describing the material, i.e., copy cataloging, enhanced copy, original, or DCRM cataloging for bibliographic materials; and collection, series, subseries, or file level processing for archival collections.

TYPES OF CELLS AND DATA INPUT

Cells in the spreadsheets are color-coded to convey where default values are entered that may be changed (green), where you manually input data (yellow), and where you should not input data because the cell contains a calculation formula (gray).

Key

Provided by tool
To be input by user
Automatically calculated by tool

Operational Impact Estimator (OIE)

Tabs

STRUCTURE AND ORDER

The following sections provide a detailed overview of each of the four spreadsheet tabs, with a general description of the purpose and function of the tab, notes on how to approach data input for that tab, an explanation of the calculation logic used in that tab, followed by a table showing each of the fields where you may input information, whether or not that field is required, a general data type (i.e., currency, free text), and a description and example input.

The tabs themselves are numbered in sequence of operations, both here in the manual and in the OIE spreadsheet. For each tab, you will input information manually into certain fields, which will feed into other fields containing calculations.

1. Define Staff Types and Hours	2. Define Capacity	3. Estimate Costs and Hours	4. Estimate Capacity Impact
---------------------------------	--------------------	-----------------------------	-----------------------------

The principal tab is “Tab 4: Estimate Capacity Impact,” which provides grand totals for operations, hours, and capacity impacts. Since it pulls in several inputs from other tabs, Tab 4: Estimate Capacity Impact should be filled out last. Ideally, you would fill out the OIE tabs in this order:

1. Define Staff Types and Hourly Rates
2. Define Capacity
3. Estimate Costs and Hours
4. Estimate Capacity Impact

Information in [Tab 1: Define Staff Types and Hourly Rates](#) and [Tab 2: Define Capacity](#) is required to take advantage of the full functionality of [Tab 3: Estimate Costs and Hours](#), which then feeds into [Tab 4: Estimate Capacity Impact](#).

TIP

Additional worksheets in the [Quick Cost Estimator](#) provide calculations that can be used in [Tab 3: Estimate Costs and Hours](#)

TAB 1: DEFINE STAFF TYPES AND HOURS

Purpose

In this tab, you will define staff types dedicated to collection stewardship activities and their rate of pay. The OIE breaks the pay rate down into an hourly rate for all positions to be used in calculations on subsequent tabs.

How to input data

There are three types of data you will input in this tab:

- 1. Data about the workday at your institution**
This assumes all salaried staff are expected to work the same number of hours in a day. If this isn't the case at your institution, generalize by using an average. In reality, some people work a lesser or greater number of hours than expected, but for the sake of simple calculations the tool assumes all will work the same hours.
- 2. Data about positions paid using an annual salary**
You can enter data here in a specific or generalized way, see further explanation below.
- 3. Data about positions paid using an hourly rate**
You can enter data here in a specific or generalized way, see further explanation below.

Depending on the size of your institution and goals for using this tool, you may want to take a more generalized or a more specific approach to data entry. You can choose to define staff types that represent multiple people in similar positions, or to represent all individual staff positions. Because this tool is intended to create informed estimates rather than exact cost calculations, either approach will be effective.

You can define up to 10 salaried and 10 hourly staff types. If this is insufficient to represent your staff, consider generalizing positions. Or, see the instructions in the [Customization](#) section on how to add more lines.

Calculation Logic Notes

For the "Days Worked Annually" field, the OIE supplies the number 260. This is based on a 52-week year, and a five-day work week. Holidays and other time off will be accounted for in later data input.

TABLE 1. Data parameters for Tab 1: Staff Types and Hourly Rates worksheet

Field Name	Required?	Data Type (unit)	Description (example)
Salaried: Working days per year	Yes, system supplied	Number	Define working days in one year. This is used in the formula to calculate cost per hour for salaried employees in this tab. The tool uses the default number of 260 days, but you can override and change this. (Example: 260)
Salaried: Working hours per day	Yes	Number	Define working hours in one workday. This is used in the formula to calculate cost per hour for salaried employees in this tab. (Example: 8)
Salaried: Job title	No	Free text	Input individual staff type salary. Enter one job title per staff type. (Example: Accessioning Archivist)
Salaried: Annual salary	Yes	Currency	Input individual staff type salary. (Example: \$65,000)
Salaried: Benefit rate (%)	Yes	Percentage	Percentage (%); input benefit rate expressed as a percentage of salary. (Example: 30.00%)
Hourly: Job title	Yes	Free text	Input locally defined job title. Enter one job title per staff type. (Example: Digitization Specialist)
Hourly: Hourly rate	Yes	Currency	Input individual staff hourly rate. (Example: \$35.00)
Hourly: Benefit rate (%)	Yes	Percentage	Percentage (%); input benefit rate expressed as a percentage of the hourly rate. (Example: 30.00%)

TAB 2: DEFINE CAPACITY

Purpose

In this tab, you can determine annual staff capacity for collection stewardship work and define annual capacity for other than personnel spending (OTPS) via budgeted amounts for costs such as supplies, transportation, vendor services, or other user-defined budgeted categories. The OIE uses the data entered here to break down time allocated toward stewardship activities into capacity increments for use in calculations in the later tabs. Capacity increments are expressed in hours, days, and months to support reporting options on subsequent tabs.

The define capacity section allows you to represent the capacity of everyone with archives and special collections acquisition and stewardship responsibilities in your organization so that the impact of any acquisition can be measured against the total available organizational capacity. If all staff with acquisition and stewardship responsibilities are listed, rather than an abbreviated list of those who might work on a specific acquisition, the capacity information can be reused for each new potential acquisition. However, it is flexible enough that you can choose any group, department, or subsection of staff whose capacity you would like to represent in this tab.

How to input data

There are four types of data you will enter in the define capacity tab:

- 1. Data about paid time off (PTO) for salaried employees.**
Though not everyone takes all time off available to them in a year, for the sake of simple calculations, the tool assumes that all employees take all time off allocated in the spreadsheet.
- 2. Data about the number of FTE (full time equivalent) for each staff type.**
You can enter data here in a specific or generalized way. If you want to generalize and combine individual positions into staff types, you can enter a number larger than 1.
- 3. Data about the amount of time allotted for each staff type toward collection stewardship duties.**
Most staff do not devote all their working hours to one kind of task. The tool asks for this data to estimate the amount of time staff will have annually to devote to collection stewardship activities, as opposed to reference desk shifts, teaching, attending meetings, and other kinds of work. You will need to determine the scope of work you define as “collection stewardship activities” per your program and institution. It may include pre-custodial activities, accessioning, cataloging, processing, conservation and preservation work, or digitization-related activities.
- 4. Data about spending capacity for needs Other Than Personnel Spending (OTPS).**
This data is used to quantify budgetary capacity for goods and services necessary to support collection stewardship activities, such as re-housing or conservation supplies, or vendor services for transportation, digitization, or other activities. You will need to determine the relevant budget categories you wish to include here, as appropriate to your budget and institution.

Calculation Logic Notes

- The OIE bases its calculations on 52 weeks in a year and subtracts holidays and PTO hours entered here to calculate total capacity hours available. PTO data is only used in calculations for salaried staff.
- To account for varying PTO accrual rates for hourly staff, you may adjust one of two input fields: Total weeks worked annually, or % of time devoted to collections. For either, you may input a reduced rate. For example, if a term employee is working on a six-month or 24-week project and will accrue two weeks PTO, then you would input 22 weeks.

TABLE 2. Data parameters for Tab 2: Defining Capacity worksheet

Field Name	Required?	Data Type (unit)	Description (example)
Salaried: Paid holidays	Yes	Number (days)	Number of paid holidays in a calendar year for salaried staff. (Example: 14)
Salaried: Other paid time off	Yes	Number (days)	Number of paid time off days (sick/annual leave), excluding paid holidays, for salaried staff. (Example: 12)
Salaried: FTE	Yes	Number range from 0.00+	Enter "1" for full-time, "0.5" for part-time. You can also enter >1 if you have multiple FTEs in the same position. (Example: 1.5)
Salaried: % of time devoted to collections work	Yes	Percentage	Estimate of the percent of their total working time devoted to collection stewardship activities. (Example: 80%)
Hourly: Hours worked per week	Yes	Number	Enter the hours per week worked by this position. If there are multiple people in the same position, you can enter the total number of hours worked across all people in the position. (Example: 35)
Hourly: Total weeks worked annually	Yes	Number	Enter the number of weeks per year this position usually works.
Hourly: % of time spent devoted to collections	Yes	Percentage	Estimate of the percent of their total working time devoted to collection stewardship activities. (Example: 80%)
Other than personnel spending (OTPS): Description	Yes	Free Text	Enter the type of expense you are representing. Two common types are supplied: Supplies and Transportation. Others can be defined as needed.
OTPS: Annual budgeted amount	Yes	Currency	Enter the dollar amount budgeted for one fiscal year. (Example: \$10,000.00)

TAB 3: ESTIMATE COSTS AND HOURS

Purpose

In this tab, you will lay out the work that will be required for a collection, who will do that work, and the minimum and maximum time it might take. The data input is broken down into standard phases of the collection stewardship life cycle to help think through the necessary work at each stage.

The tool uses that data, combined with data from the first two tabs, to determine and then total the number of hours of work required and the salary cost of that work. Total hours and costs of each activity are shown per line, as well as totaled at the top of the tab.

How to input data

This tab is organized into standard “Phases” that are common to the life cycle for most acquisitions:

- Pre-Acquisition
- Acquisition
- Cataloging and Processing
- Post-Acquisition Treatments
- Other Activities*

*The section titled “Other activities” allows you to input additional activities that do not fall into the standard phases listed in the OIE.

You may follow these phases as a general guide to structuring their estimations. However, they may also be ignored or even repurposed or redefined as needed.

For each phase, identify the type of work required, select the staff type that will perform that work, and estimate the minimum and maximum number of hours the work will take. When you select the staff type from the drop-down menu, the Job Title you specified in Tab 1 will populate in the job title column. If multiple staff are working on the same activity, you should repeat the line item, and adjust the appropriate fields (e.g., staff type, job title, min/max hours) to reflect their individual contributions to the activity.

You can take a granular or generalized approach to entering this data, depending on how much information you have and how accurate an estimation you need.

In the Other Than Personnel Spending section, you can estimate other costs not suitable to the staffing equations. The provided drop-down will show default options (Supplies, Transportations) as well as any user-defined categories specified in [Tab 2: Define Capacity](#).

If needed, additional lines may be added by following the steps in [Customization](#).

TIP

If you are not feeling confident in your time estimations, use the resources in the [Quick Cost Estimator](#) section to aid in filling out this tab.

For each of the five phase sections fill out the following fields, as appropriate to your project:

TABLE 3. Data parameters for Tab 3: Estimate Costs and Hours worksheet, four phase sections

Field Name	Required?	Data Type (unit)	Description (example)
Activity	No	Free text	Input a description of the activity being performed. (Example: "Site visit")
Staff type	Yes	Controlled list	Select a value from the provided drop-down menu to indicate the staff type performing the activity. Staff types are defined in the "Define staff types" tab. (Example: Staff Type C)
Hours (min)	Yes	Number (Hours)	Enter the minimum number of hours estimated to complete this activity. (Example: 4)
Hours (max)	Yes	Number (Hours)	Enter the maximum number of hours estimated to complete this activity. (Example: 8)

TABLE 4. Data parameters for Tab 3: Estimate Costs and Hours, Other than Personnel Spending (OTPS) section

Field Name	Required?	Data Type (unit)	Description (example)
Activity	No	Free text	Input a description of the activity associated with the cost. (Example: "Acquisitions reboxing")
Expense type	Yes	Controlled list	Select a value from the provided drop-down menu to indicate the staff type performing. Staff types are defined in the "Define staff types" tab. (Example: Staff Type C)
Subtotal cost (min)	Yes	Currency (dollars)	Enter the minimum number of hours estimated to complete this activity. (Example: 4)
Subtotal cost (max)	Yes	Currency (dollars)	Enter the maximum number of hours estimated to complete this activity. (Example: 8)

TAB 4: ESTIMATE CAPACITY IMPACT

Purpose

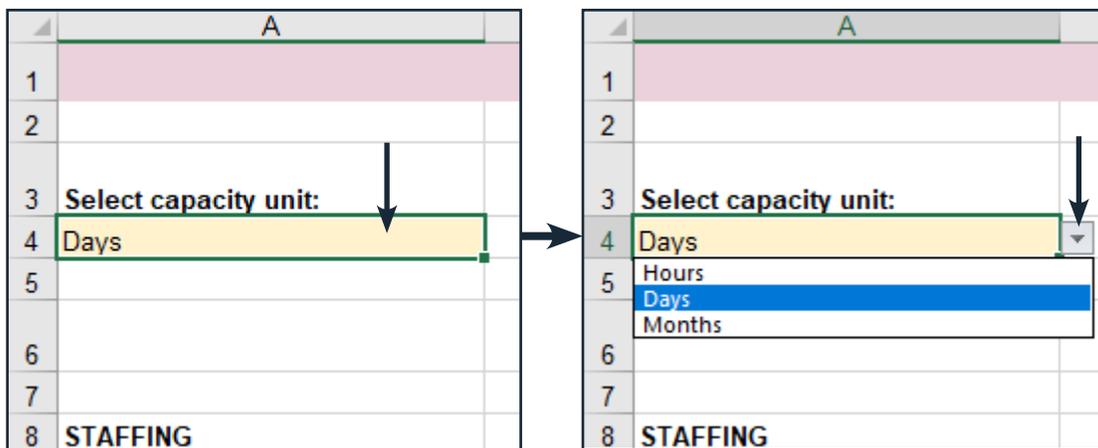
This tab uses data entered in the previous tabs to calculate how the activities defined in [Tab 3: Estimate Costs and Hours](#) impact total annual operational capacity.

Capacity impact is displayed per staff type. Total staffing impact across all staff types is displayed at the top of the tab, expressed as both time increments and as a percentage of total annual capacity. Impacts to OTPS budgets are displayed at the bottom of the tab.

How to input data

You do not need to input any data on this tab as it draws all its data from the other tabs. If you have filled out sufficient data in the first three tabs, all data will prepopulate in this tab.

The one function you control on this tab is the unit in which capacity is expressed. The choices are hours, days, and months. Use the drop-down menu in the upper left corner of the tab labeled "Select capacity unit" to change the unit in which this tab displays data. To change the capacity unit, click on the yellow cell, which will cause a small gray box to appear to the right of the cell. Next, click on the gray box to open the drop-down list of available units. Select the preferred unit, which will then appear in the yellow cell.



Calculation Logic Notes

- Total institutional capacity impact is calculated here per the staff types defined in [Tab 1: Define Staff Types and Hourly Rates](#) and the other expenses defined in [Tab 2: Define Capacity](#).
- For staffing costs, the Capacity Calculator creates minimum and maximum subtotaled hours per staff type and budget line from data entered in [Tab 3: Estimate Costs and Hours](#), and subtracts it from the Total Annual Hours defined in [Tab 2: Define Capacity](#).
- For expense costs, the Capacity Calculator creates minimum and maximum subtotaled dollar amounts per expense type from data entered [Tab 3: Estimate Costs and Hours](#) and subtracts it from the Annual Budgeted Amount defined in [Tab 2: Define Capacity](#).

Customization

ADDING ADDITIONAL LINES TO TAB 3: ESTIMATE COSTS AND HOURS

You may find that you want to add additional line items to [Tab 3: Estimate Costs and Hours](#). This can be done following the instructions outlined below.

Steps to add line items are as follows:

1. Select the entire last row of the set you want to add a line to in the spreadsheet by clicking on the row number. The row will be highlighted, showing that the row has been selected.
2. Right-click on any cell and select "Insert row" from the pop-up menu.
3. Select the entire row you would like to copy by clicking on the row number; this will highlight the entire row.
4. Right-click on the row you have just highlighted and select "Copy" from the pop-up menu.
5. Right-click on the new row you just inserted and select "Paste" from the pop-up menu.

USING THE OIE TO MEASURE IMPACTS OF MULTIPLE ACQUISITIONS

By compiling data from multiple finished OIEs, the cumulative impact of multiple acquisitions can also be measured by this tool.

For example, an archive may want to measure the impact of three acquisitions that took place during the previous fiscal year to produce data for an annual report. For each acquisition in this scenario, the archivist would have created a completed copy of the OIE.

1. For ease, you should first locate each copy of the OIE that you want to compile and have them readily available to reference.
2. Create a brand new copy of the OIE, following the steps outlined in the [Accessing](#) section of this Manual, and rename it to something unique (i.e., "Compiled OIE Data for FY20 Acquisitions").
3. You will then fill out each of the four tabs in the same order as suggested in [Structure and Order](#).

Tab 1: Define Staff Types and Hourly Rates

- Enter in the number of working hours per day.
- Here, input a deduplicated list of all salaried and hourly staff types, job titles, salaries and benefit rates compiled from all acquisitions being measured.

Tab 2: Define Capacity

- Enter the number of paid holidays, and other paid time off (days), FTE number for all salaried employees and percentage of time devoted to collections for each salaried staff type, hours worked per week, total weeks worked annually, and % of time spent devoted to collections.
- Enter a deduplicated list of all Other Than Personnel Spending (OTPS) categories compiled from all spreadsheets, and their respective annual budgeted amount.

Tab 3. Estimate Costs and Hours

You may take one of two approaches to compile a list of activities, staff types, and minimum/maximum hours.

- **Approach 1:** Enter single line items for each activity performed by staff across all acquisitions.
 - **For this approach,** consider distinguishing between each acquisition by entering the acquisition name, or some other identifying information, in the “Activity” field.
 - **For example,** if the Accessioning Archivist performed accessioning for three separate acquisitions for two hours (minimum) and four hours (maximum), you would add three separate lines to the OIE.

- **Approach 2:** Enter a single line for the cumulative total for each staff type for each activity.
 - **For this approach,** you will combine similar activities across the collections being represented.
 - **For example,** if the Accessioning Archivist performed accessioning for three separate acquisitions for two hours (minimum) and four hours (maximum), here you would add a single line for Activity: Accessioning, Hours (Min): 6, Hours (Max) 12.

For either approach, you will likely need to enter additional lines beyond what is offered in the default OIE. Instructions for how to add additional lines can be found in [Adding Additional Lines to Tab 3: Estimate Costs and Hours](#) in the Customization section.

Tab 4: Estimate Capacity Impact

This final tab should reflect the cumulative total of hours and costs for all acquisitions for which information is compiled into this sheet.

Quick Cost Estimator

TAB 1: ESTIMATE CATALOGING HOURS

Tab 1: Estimate Cataloging Hours provides a way to estimate cataloging hours for materials described bibliographically, such as rare books, bound manuscripts, monographs, serials, maps, etc. The worksheet provides seven different potential levels of cataloging effort. These cataloging levels are modeled after the [schema](#) published by the University of Florida George A. Smathers Libraries.¹²

Use of this worksheet is optional and is offered as a tool to help estimate the work necessary to address the cataloging needs of a collection or project. It can be used on its own, or you can transfer data calculated here into the Operational Impact Estimator on [Tab 3: Estimate Costs and Hours](#) as is relevant for their work. You may also customize the worksheet using local metrics following the directions below.

To generate estimated cataloging hours, enter an item count expected to be cataloged for each cataloging level. A total minimum and maximum hour count, as well as a minimum and maximum per level, will be auto-calculated by the worksheet.

TABLE 5. Data parameters for optional Tab 1: Estimate Cataloging Hours worksheet

Field Name	Required?	Data Type (unit)	Description (example)
Items	No	Number (items)	Number of items. (Example: 50)

Entering local cataloging metrics

You may also use Tab 1: Estimate Cataloging Hours to input locally used cataloging metrics by following these steps:

1. In Tab 3: Guidelines Reference, add local data into the cells under the yellow-colored cells in the “Local Cataloging Levels and Metrics” section, including the name of the level, minimum, and maximum hours.
2. In Tab 1: Estimate Cataloging Hours, input the number of items into the “Items” field. The worksheet will automatically calculate the estimated minimum and maximum hours, based on what was input into Tab 3: Guidelines Reference.

TAB 2: ESTIMATE ARCHIVAL PROCESSING

Tab 2: Estimate Archival Processing provides a way to estimate processing hours based on linear footage and processing level as defined by two schemas: the Guidelines for Efficient Archival Processing in the University of California Libraries (v 4.0)¹³ and the Archives of American Art processing levels.¹⁴

Use of this worksheet is optional and is offered as a tool to help estimate the work necessary to address the processing needs of a collection or project. You may transfer data calculated here to the Operational Impact Estimator [Tab 3: Estimate Costs and Hours](#) as is relevant for your work. You may also customize the worksheet using local metrics, using the directions below.

To generate estimated processing hours, enter the approximate number of linear feet expected to be processed for each level. A total minimum and maximum hour count, as well as a minimum and maximum per level, will be auto-calculated by the worksheet.

TABLE 6. Data parameters for optional Tab 2: Estimate Archival Processing Hours worksheet

Field Name	Required?	Data Type (unit)	Description (example)
Linear Feet	No	Number (items)	Total number of linear feet. (Example: 100)

Entering local archival processing metrics

You may also use Tab 2: Estimate Archival Processing to input locally used processing metrics by following these steps:

1. In Tab 3: Guidelines Reference, you can add local schema data. In the Archival Processing Levels Section, find the table for Local Processing Levels and Metrics. In the yellow-colored cells, enter data for all of the Processing Levels used in your local schema: Number of hours per linear foot (minimum) and Number of hours per linear foot (maximum) for as many processing levels as are used in your local schema.
2. In Tab 2: Estimate Archival Processing, input the number of linear feet into the “Linear feet” field. The worksheet will automatically calculate the estimated minimum and maximum hours based on what you input into Tab 3: Guidelines Reference.

OTHER CALCULATION RESOURCES

In addition to the above worksheets, you may wish to reference the following resources in calculating data to enter into the Operational Impact Estimator (OIE).

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