

## San Francisco Public Utilities Commission, Wastewater Enterprise

Document Name:	Authors:	Custodian:	Approval/Date	Page:
<i>Standard Operating Procedure (SOP) Preparation and Approval with Examples</i>	<i>Brenda Donald</i>	<i>Lewis Harrison</i>	<i>06/15/2016</i>	<i>1 of 12</i>

### Standard Operating Procedure (SOP) Preparation and Approval with Examples

#### 1.0 INTRODUCTION

This Standard Operating Procedure (SOP) explains the *procedure* for producing the SOP *document*. Fill out and edit the Standard Operating Procedure (SOP) Example Document attached as Appendix A to produce the document. This procedure is to be used in the drafting, revision and approval of all Wastewater Enterprise (WWE) Standard Operating Procedures (SOPs) documents

It is important that mission critical WWE SOPs include: proper management perspective, appropriate operational expertise and stakeholder buy-in. SOPs for these procedures will be produced collaboratively by a SOP Team (see definitions).

#### 2.0 REQUIREMENT

ISO 14001 Environmental Management Systems (EMS) 4.4.6 Operational Control.

#### 3.0 PURPOSE

To provide a standard for producing SOPs, including their method of approval.

#### 4.0 SCOPE

Procedures generally considered appropriate for standardization as documented SOPs are those that are prioritized as mission critical.

#### 5.0 DEFINITIONS

SOP Team	A working group consisting of one or more of the following: A Project Manager, Authors, SME's, Managers, Supervisors and/or other stakeholders as needed.
Standard Operating Procedure (SOP)	A set of written instructions that document a routine or repetitive activity followed by an organization. The development and use of SOPs are an integral part of a successful quality system as it provides individuals with the information to perform a job properly, and facilitates consistency in the quality and integrity of a product or end-result. The term "SOP" may not always be appropriate and terms such as protocols, instructions, worksheets, and laboratory operating procedures may also be used. For this document "SOP" will be used.

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International Standards Organization (ISO 14001)	International Standards Organization guidelines for Environmental Management Systems (EMS).
Subject Matter Expert (SME)	Anybody with in-depth knowledge of the subject you are attempting to document. You need to talk to SMEs in the research phase of a documentation project (to get your facts straight) and you need to involve them in the technical validation of your drafts (to make sure that your interpretation of information matches theirs).
Stakeholder	People who are affected by the procedure, who have influence or power over it, or have an interest in its successful or unsuccessful conclusion.
Author	For this document 'Author' is defined as a team member of the SOP Team. There can be several Authors. Prerequisite skill this team member should have: <ul style="list-style-type: none"> <li>• Journey level skills in technical writing, editing and with writing and presentation software,</li> <li>• The ability to manage or co-manage a project, and ideally,</li> <li>• Basic familiarity with the procedure or overall operation</li> <li>• Basic photography or videography skills.</li> </ul>
Mission Critical	<ul style="list-style-type: none"> <li>• Any factor of a system whose failure will result in a failure to protect the WWE, the receiving waters, the workers or the public.</li> </ul> Or more generally: <ul style="list-style-type: none"> <li>• Any factor of a system (equipment, process, procedure, software, etc.) whose failure will result in the failure of business operations.</li> </ul>
Custodian	In SharePoint or other document management systems: the individual who has 'custody' of a document is responsible for the management of that document. The custodian should be assigned by a Manager or delegated Project Manager.
Project Manager	Assigned by a Manager to work with the team. Responsibilities include holding the team accountable, assessing and managing risk, communication with stakeholders, project schedule, product launch and documenting lessons learned.
SFPUC Mission	To provide our customers with high quality, efficient and reliable water, power, and sewer services in a manner that is inclusive of environmental and community interests, and that sustains the resources entrusted to our care.
Task	A task has a definite beginning and end. Tasks are performed in relatively short periods of time. They are usually measured in minutes or hours. Tasks are observable. By observing the performance of a jobholder, a definite determination can be made that the task has been performed. Each task is independent of other actions. Tasks are not dependent on components of a procedure. A task is performed by an individual for its own sake. A task statement is a statement of a highly specific action. It always has a verb and an object. It may have qualifiers, such as "measure distances with a tape measure." A task statement should not be confused with an objective that has conditions and standards.
Step	A stage in the task process. Example: A 'step' is a part of a 'walk'.
Section 8.0 Procedure	The section of the SOP that describes the procedure and the section requiring the most collaboration.

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SOP Workshops	A series of meetings held on a regular basis during which the tasks of SME interviews, collaborative editing, field vetting and photo/video image capturing are conducted.
Metric	A standard of measurement. For the purposes of this SOP: a standard unit used in measuring the effectiveness of a program or procedure

### 6.0 RESPONSIBILITY AND AUTHORITY

Any SFPUC employee may be given the responsibility and authority to draft an SOP for a procedure that he or she has experience performing.

Every SFPUC employee has the authority to suggest changes to existing SOPs.

Section supervisors have the responsibility to produce draft SOPs for any procedure that he or she regularly oversees. The supervisor may draft the SOP, delegate the drafting, or may revise an SOP.

The Document Manager receives electronic copies of approved SOPs from the Section Supervisors and stores them on an accessible site. Final SOPs are then announced to the affected staff via e-mail with a link to the document.

### 7.0 FLOW CHART PROCESS OVERVIEW

Please refer to the SOP Approval Process Flowchart link in Section 10.

### 8.0 PROCEDURE

#### 8.1 Conduct a Needs Assessment - Determine what procedures require documentation

The current procedure in place for determining what procedures or processes need to be documented is a survey of high level and/or high interest stakeholders including managers, program managers, supervisors and SMEs. These procedures are entered into a spreadsheet and reviewed by the Manager. Once approved the procedure will be prioritized and assigned to a SOP Team.

8.2 Assemble the SOP Team Initially the Manager or a supervisor should choose the team members. All team members should be qualified for their roles and understand their roles. They should include, but are not limited to the following roles and tasks:

- **A Project Manager/ Leader/Coordinator:** Manage Workshops: reserve meeting space or find a safe field location, set agendas, hold team members accountable for action items, ensure all input is considered. Act as an Author, review any consulting budget, keep the project on schedule and manage document sharing. Submit SOP for review and approval.

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- **Subject Matter Experts (SMEs):** also see definitions. Attend Workshops in the office or in the field. Will be interviewed by the Authors or can act as an Author depending on qualifications. Perform the procedure, breaking it into tasks and steps, inform the team of any troubleshooting issues and be willing to be photographed or videoed for training images.
- **Supervisor:** At least one supervisor should monitor the progress of the Team. This can also be the Project Manager.
- **Authors:** also see definitions. Use or learn to use Review/Track Changes and Comment functions. This is critical for document control and specifically version control. Edits or other changes made on hard copies may be inaccurately documented or lost.

Consultants may be used in any role for which they are qualified.

8.3 Schedule a series of SOP Workshops The goal is to end each workshop with an updated draft SOP. The Project Manager ensures the Workshop schedule and location is reasonably convenient for the entire Team. Arrange for access to a meeting room, projector and a document sharing mechanism. These Workshops should be at least biweekly but ideally once a week so action items can be completed and the material stays current. A mission critical SOP will take at least three to four Workshops.

### Workshop Scheduling – Approximately two hours per Workshop

- *The SME interview and SOP drafting/editing workshops* will be in a meeting room.
- Primary approval: After the Team is satisfied with the draft SOP it can be sent for Stakeholder approval.
- *Field vetting workshop:* can take place concurrently with initial approvals to save time. During this phase the SOP is followed in the field with special attention to Health and Safety. Images of the SOP are captured for use in the final SOP.
- *Final edit workshop(s)* will be required to incorporate the edits, lessons learned from the field and the images from field vetting.
- Submit for final approval

8.4 Interview the SME regarding Section 8.0 Procedure If an existing SOP exists then review the SOP line by line each task and steps in the task with the SME. Ensure the updated SOP conforms to the SOP Example. If there is not SOP use the SOP Example.

This interview should be conducted in collaboration with team members, ideally with more than one SME. The Authors can designate a drafting Author or take turns on the overhead projector or a laptop. During Field Vetting Workshops Authors can take separate notes and later synchronize. Brush up on meeting management skills.

During the interview:

- Listen carefully and pause often to mirror back the information “in other words” to make sure the SME is understood. Mirroring back the information will also provide the opportunity to put the information into plain language that conveys the appropriate operations experience and the proper management perspective.
- Ask open ended “How, Why and What”? questions instead of the yes/no type.
- Politely manage the range and the depth of the interview to keep the workshop on task and on schedule.

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8.5 Submit Draft for Initial Manager Review Request a turnaround time of one week.

8.6 Submit Draft for Stakeholder Review Request a turnaround time of one week. Edit all corrections from Field Testing, Stakeholders and Management into a final draft.

8.9 Submit Final Draft for Manager Review Request a turnaround time of one week.

8.10 Submit Approved SOP to Document Manager

### 9.0 QUALITY ASSURANCE

Quality Assurance (QA) is a way of preventing mistakes or defects in manufactured products and avoiding problems when delivering solutions or services to customers. The EMS and the ISO guidelines are quality assurance toolkits.

- Consider what service the procedure is delivering and ensure the tasks fit the procedure and the procedure fits the service.
- Mistakes and re-work can be greatly reduced by SOP Teamwork and the participation of the stakeholders in the production of the SOP.
- Identify metrics for measuring procedure success over time. Incorporate those metrics into the database reporting (Maximo, PIMS, and SharePoint).

Section supervisors are to perform a review and update of their section SOPs every two years.

### 10.0 REFERENCES

SOP Approval Process Flowchart

<http://currents.ad1.sfwater.org/sites/csd2/SOP/SOP%20Approval%20Process%20Flowchart.pdf>

Six Sigma® Dictionary

<http://www.isixsigma.com/dictionary/subject-matter-expert-sme/>

United States Environmental protection Agency web site

<http://www.epa.gov/ems/>

EPA QA/G-6 GUIDANCE FOR PREPARING STANDARD OPERATING PROCEDURES

<http://www.epa.gov/QUALITY/qs-docs/g6-final.pdf>

Sowden, Rod; Office, Cabinet (August 30, 2011). Managing successful programmes. Stationery Office. p.64. ISBN 9780113313273.

Task Definition

[http://www.nwlink.com/~donclark/hrd/isd/task\\_inv.html#sthash.xFCy6Rbq.dpuf](http://www.nwlink.com/~donclark/hrd/isd/task_inv.html#sthash.xFCy6Rbq.dpuf)

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The Society for Technical Communication Newsletter: Conducting Successful SME Interviews, By Jennifer Lambe

<http://www.stcsig.org/usability/newsletter/0505-sme.html>

## **Standard Operating Procedure (SOP) Document Examples** **Example Title = Object (Sewer)+ Procedure (Cleaning)+SOP**

### **1.0 INTRODUCTION – READ THIS FIRST**

**Example:** The introduction section will tell the reader what the procedure is and why we do it.

**This document contains examples in each section and is to be used with the Standard Operating Procedure (SOP) Preparation and Approval SOP in the drafting of all Standard Operating Procedures SOPs.**

As this document is only for example, please see the supporting SOP for guidance and more specific content.

**Please note: Read this SOP through before starting, Section 8.0 may be the best place to begin writing.** SOPs should be written in plain, clear language. Edit the SOP to contain as few words as practical. When introducing acronyms, list the words in the acronym first and put the acronym itself in parentheses.

### **2.0 REQUIREMENT**

This section will contain the requirements this procedure fulfills, or that the formalization of this procedure into an SOP fulfills.

Requirements may be the International Standards Organization (ISO) guidelines, National Pollution Discharge Elimination System (NPDES) Permit requirements, Customer Service standards or Accounting requirements.

**Example:** This SOP Example and the SOP Preparation and Approval SOP fulfills the requirement of the International Standards Organization (ISO) guidelines for Environmental Management Systems (EMS) 4.4.6 Operational Control.

### **3.0 PURPOSE**

This section will contain a brief explanation of why the procedure needs to be standardized.

The purpose of this example is to aid in the production of a standardized document that is:

- the product of stakeholder collaboration,
- field vetted and test driven
- respectful of the work it describes.

And

- saves re-work time and other resources
- allows the user to learn the subject procedure and the process of creating SOPs.

### **4.0 SCOPE**

This section indicates what is covered and it's applicability (identifying when the procedure is to be followed).

## Appendix A

### 5.0 DEFINITIONS - EXAMPLES

This section is where acronyms are spelled out, any special equipment or process are described, professional trade slang is translated and synonyms are listed.

Acronym	An abbreviation formed from the initial components in a phrase or a word. SFPUC is an acronym.
Synonym	A word with the same or similar meaning of another word. Example: A Vactor, A Vac-Con and a Vacuum Truck are synonymous.
SOP Team	A working group consisting of one or more of the following: A project manager, Authors, SME's, Managers, Supervisors and/or other stakeholders as needed.
Standard Operating Procedure (SOP)	A set of written instructions that document a routine or repetitive activity followed by an organization. The development and use of SOPs are an integral part of a successful quality system as it provides individuals with the information to perform a job properly, and facilitates consistency in the quality and integrity of a product or end-result. The term "SOP" may not always be appropriate and terms such as protocols, instructions, worksheets, and laboratory operating procedures may also be used. For this document "SOP" will be used.
International Standards Organization (ISO 14001)	International Standards Organization guidelines for Environmental Management Systems (EMS).
Subject Matter Expert (SME)	Anybody with in-depth knowledge of the subject you are attempting to document. Interview SMEs in the research phase of a SOP project, observe and document them as they carry out the procedure during field vetting and seek their consensus and approval of the final draft.
An Environmental Management System (EMS)	A framework that helps a company achieve its environmental goals through consistent control of its operations. The assumption is that this increased control will improve the environmental performance of the company.
Stakeholder	People who are affected by the procedure, who have influence or power over it, or have an interest in its successful or unsuccessful conclusion.
Author	For this document 'Author' is defined as a team member of the SOP Team. There can be several Authors. Prerequisite skills this team member should have (or be able to pick up quickly): <ul style="list-style-type: none"> <li>• Journey level skills in technical writing, editing and presentation software,</li> <li>• The ability to manage or co-manage a project, and ideally,</li> <li>• Basic familiarity with the procedure or overall operation</li> <li>• Basic photography or videography skills.</li> </ul>
Mission Critical	<ul style="list-style-type: none"> <li>• Any factor of a system whose failure will result in a failure to protect the WVE, the receiving waters, the workers or the public.</li> </ul> <p>Or more generally:</p> <ul style="list-style-type: none"> <li>• Any factor of a system (equipment, process, procedure, software, etc.) whose failure will result in the failure of business operations.</li> </ul>
SFPUC Mission	To provide our customers with high quality, efficient and reliable water, power, and sewer services in a manner that is inclusive of environmental and community interests, and that sustains the resources entrusted to our care.
Task	A task has a definite beginning and end. Tasks are performed in relatively short periods of time. They are usually measured in minutes or hours. Tasks are observable. Each task is independent of other actions. Tasks are not dependent on components of a procedure. A task statement is a statement of a highly specific action. It always has a verb and an object. It may have qualifiers, such as "measure distances with a tape measure." A task statement should not be confused with an objective that has conditions and standards.
Step	A stage in the task process. Example: A 'step' is a part of a 'walk'.
Procedure	A particular way of accomplishing something, a series of steps followed in a regular definite order.



## Appendix A

Section 8.0 Procedure	The section of the SOP that describes the procedure and the section requiring the most collaboration.
Process vs. Procedure	A process defines "what" needs to be done and which roles are involved. A procedure defines "how" to do the task and often applies to a single role.
SOP Workshops	A series of meetings held on a regular basis during which the tasks of SME interviews, collaborative editing, field vetting and photo/video image capturing are conducted.
Vet	Make a careful and critical examination of (something).

### 6.0 RESPONSIBILITY AND AUTHORITY

This section explains who is responsible and/or has the authority to conduct the procedure. Use the job title and position number. Add a web link of the S.F. Human Resources job description in Section 10. References. Any sub-roles should be listed as a bullet or sub-bullet under the job title and position number.

#### Example:

6.1 Communications Dispatcher (1704) Receives and dispatches work orders pertaining to complaints, service issues, construction, repair and replacement of sewer mains and sewer laterals.

6.2 Supervising Wastewater Control Inspector (6116) Plans, directs, and evaluates the work of Wastewater Control Inspectors, and provides technical assistance and feedback on their performances

### 7.0 FLOW CHART PROCESS OVERVIEW

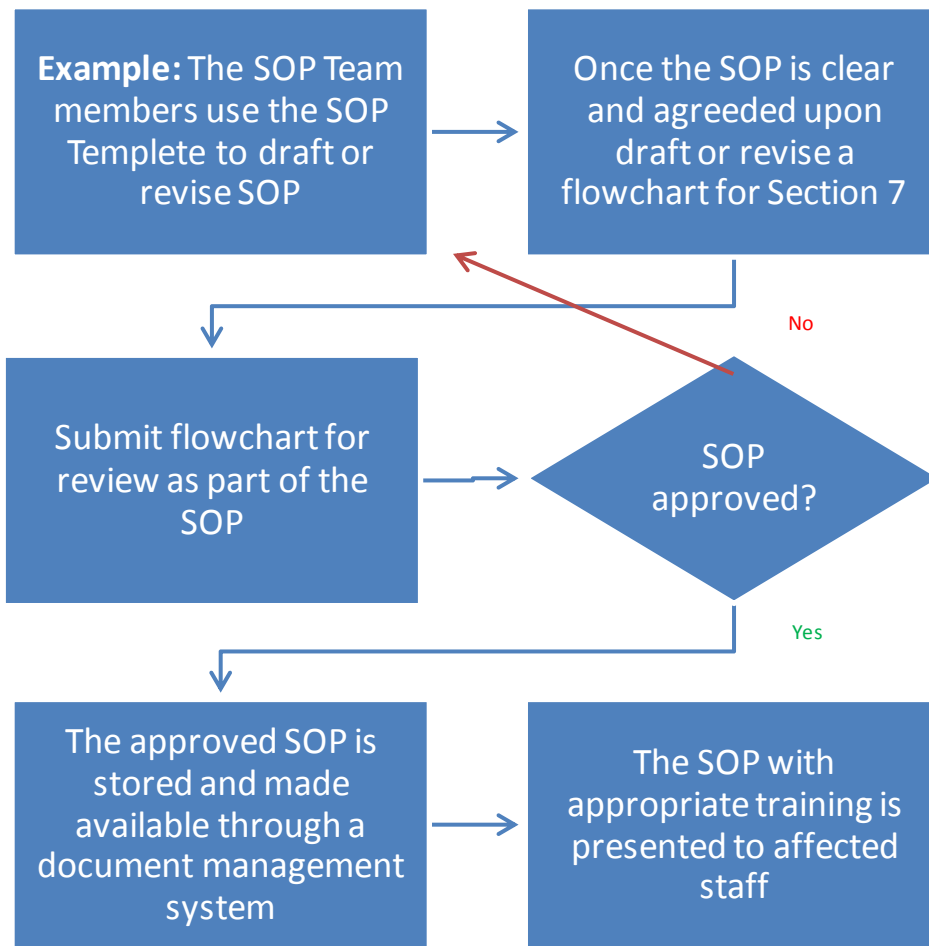
Flowcharts are used in designing and documenting complex processes or programs. Like other types of diagrams, they help visualize what is going on and thereby help the people to understand a process, find flaws, bottlenecks, and other less-obvious features within it. There are many different types of flowcharts. Keep it simple:

- a processing step is usually denoted as a rectangular box
- a decision usually denoted as a diamond.



Find arrows and shapes for making flowcharts in MSWord on the Insert Tab under Shapes and/or SmartArt. Once inserted; use the Design Tools Tab or left click to modify the flowchart. Try not to use Visio or additional software that might complicate collaborative edits.

Appendix A



**8.0 PROCEDURE**

This section describes the procedure broken down into steps and tasks. Use MS Word software to edit collaborate and review. This section will require the most labor. Although this is Section 8.0 it may be the most productive place to start (after an initial review).

8.1 Header

Use the top line provided in New Times Roman 12 point bold above the header table. Use 10 point New Times Roman italics for header table entries. For subject use the appropriate EMS element (see references). Use the title standards listed in the introduction section.

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## Appendix A

### 8.2 Body

As indicated by this example, the SOP will contain the following sections given in order, using 10-point font and all capital letters with bold type. Subheadings should use upper and lower case lettering, underlined.

- 1 Tasks can be outlined and numbered
  - a. Steps can be broken down this way too.
    - o Or if bullets will be clear use them

If something is not applicable to a particular SOP, the caption should still be included, but underneath the caption enter "None", "Not Applicable", etc.

#### **1.0 INTRODUCTION**

#### **2.0 REQUIREMENT**

#### **3.0 PURPOSE**

#### **4.0 SCOPE**

#### **5.0 DEFINITIONS**

#### **6.0 RESPONSIBILITY AND AUTHORITY**

#### **7.0 FLOW CHART PROCESS OVERVIEW**

#### **8.0 PROCEDURE**

#### **9.0 QUALITY ASSURANCE**

#### **10.0 REFERENCES**

#### **9.0 QUALITY ASSURANCE**

This section describes the Quality Assurance (QA) tasks associated with the SOP.

**For example:** QA of this example and the associated SOP will be demonstrated by the approval of the SOP and the consistent use of the procedures.

Supervisors are to perform a documented review and update of their section's SOPs every two years to keep them current.

#### **10.0 REFERENCES -Examples**

This section contains references to documents used in producing the SOP and web links to the document. Include permits, PIMS Manual, Job Descriptions...

6116 Supervising Wastewater Control Inspector Recruitment #PBT-6116-062713

<http://www.jobaps.com/SF/sup/bulpreview.asp?R1=PBT&R2=6116&R3=062713>

Communications Dispatcher I (#1704)

<http://www.jobaps.com/SF/specs/classspecdisplay.asp?ClassNumber=1704>

Six Sigma® Dictionary

<http://www.isixsigma.com/dictionary/subject-matter-expert-sme/>

United States Environmental Protection Agency web site EMS

<http://www.epa.gov/ems/>

Environmental Management Systems (EMS) Handbook for Wastewater Utilities

[http://water.epa.gov/learn/training/wwoperatortraining/upload/2004\\_08\\_ems\\_EMSWastewaterHandbook.pdf](http://water.epa.gov/learn/training/wwoperatortraining/upload/2004_08_ems_EMSWastewaterHandbook.pdf)

EPA QA/G-6 GUIDANCE FOR PREPARING STANDARD OPERATING PROCEDURES

## Appendix A

<http://www.epa.gov/QUALITY/qs-docs/g6-final.pdf>

Sowden, Rod; Office, Cabinet (August 30, 2011). Managing successful programmes. Stationery Office. p. 64. [ISBN 9780113313273](#).

Task Definition

[http://www.nwlink.com/~donclark/hrd/isd/task\\_inv.html#sthash.xFCy6Rbq.dpuf](http://www.nwlink.com/~donclark/hrd/isd/task_inv.html#sthash.xFCy6Rbq.dpuf)

The Society for Technical Communication Newsletter: Conducting Successful SME Interviews, By Jennifer Lambe

<http://www.stcsig.org/usability/newsletter/0505-sme.html>

17 Environmental Management System (EMS) elements

<http://www.p2pays.org/iso/emisofaq.asp#faq8>