

Travis County Information Technology Services

Change Management Guide

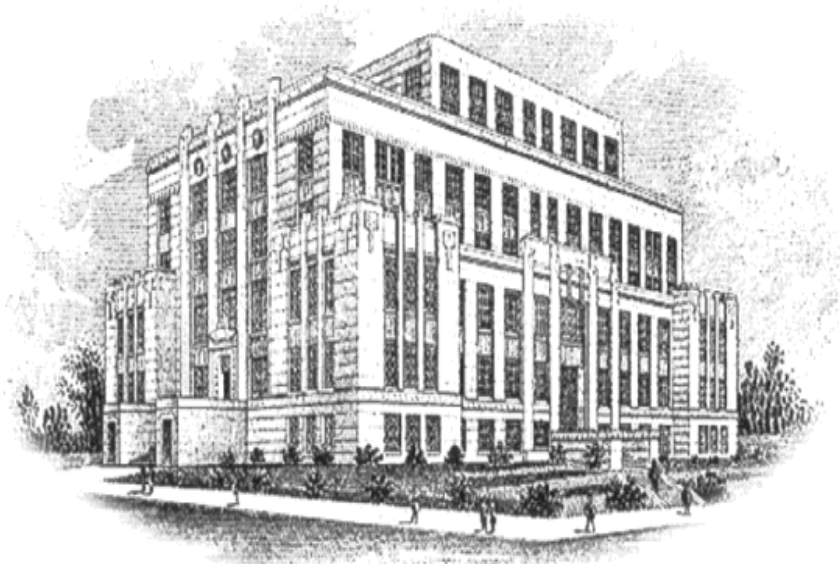


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1. Objectives

Change management is one of the most important components to an organization. Implementing a formalized Change Management process enables the organization to more effectively manage change and reduce the risk associated with deploying change. The key components of a Change Management process are

- Approval
- Communication
- Impact analysis
- Mitigation of risk
- Reporting
- Tracking of requests
- Trend analysis

It is critical that Travis County Information Technology Services (ITS) employs a consolidated Change Management process that can be utilized for managing all changes on ITS-managed resources. The purpose of the Change Management Methodology is to

- Balance mitigation of risk in a changing environment with the needs of the business to be agile
- Ensure that changes are made with minimum disruption of services
- Maintain management control of the IT environment
- Provide accurate and timely information about all changes
- Provide a consistent approach for handling all changes
- Reduce or eliminate changes that need to be backed out due to inadequate preparation
- Verify that changes are consistent with Travis County business and technical plans

2. Scope

This document establishes standardized Change Management Procedures.

The Change Management Procedures provide a structure when there is any requirement to change the IT environment. This framework assists in communicating, planning, and reducing the risk of interruption of services provided to the production environment.

The requirements of this process apply to the IT environment managed by Travis County ITS in its entirety. All changes must be performed by authorized personnel only. All changes to the Travis County ITS production environments must follow the approved change management process unless the change is categorized as an exception.

3. Communication Methodology

One of the most important aspects of a Change Management Process is the Communication Methodology. A weekly summary of all newly-created change tickets is sent to all ITS staff and Departmental IT staff.

Changes causing or potentially causing outages must be communicated to the affected departments and users if the change is to occur during the working hours of that department.

Changes affecting or potentially affecting users by making noticeable changes to their computing environment must be communicated to the affected departments and users.

There are some additional communication requirements when implementing changes that affect departments who have requested a change blackout. See Section 5 regarding Change Blackouts for more information.

4. Change Management Methodology

Requests For Change (RFC) must be entered by the person who is performing that change. The person performing the change is best suited to gather all of the required information and properly assess risk. Changes submitted for another person to perform should be entered as a Request. The receiver of that Request enters the Change.

4.1 Guidelines for Recording Changes

A Change is the addition, modification, or removal of anything that could have an effect on IT services. Only certain changes are required to be recorded in the Travis County ITS environment. When determining whether to enter a change, ask the following questions. If any can be answered as “yes,” it is advisable to enter the change:

- Is there value in recording this change?
- Could recording this change be beneficial to others?
- Could other systems, either departmental or ITS-managed, be affected?
- Does this change affect more than a single user, workstation, or printer?
- If I don’t record this change and it causes problems, will it be easy for or others to identify the cause?
- Will this change affect IT support resources?

The following change types and activities provide guidance as to whether or not a change should be recorded. If there is any uncertainty, err on the side of recording the change.

- **Hardware Changes**
 - **Included**
 - Installing, removing, or relocating equipment
 - **Excluded**
 - Installing, removing, or repairing cabling
 - Changing printers
 - Changing workstations

- **Visual Image Changes**
 - **Included**
 - Changing web page scripts
 - **Excluded**
 - Changing artistic presentation of web pages
 - Changing web page text content

- **Internally-Developed Software Changes**
 - **Included**
 - Changing software that is running on or linked to by any hardware or software in the Travis County IT environment
 - Applying performance or function enhancements
 - Fixing known errors
 - **Excluded**
 - Changing development or test environments
 - Changing application code tables
 - Changing batch program execution schedules

- **Vendor-Developed Software Changes**
 - **Included**
 - Deploying software to more than one user, workstation, or printer
 - Regularly updating Operating Systems
 - Changing configuration or setting
 - Changing user accounts
 - Deleting files
 - **Excluded**
 - Changing development or test environments
 - Deploying software to a single user, workstation, or printer
 - Viewing configuration data
 - Adding or copying files

- **Network Changes**
 - **Included**
 - Changing telecommunication equipment, including all routers, switches, telephone lines, and network-connected workstations
 - **Excluded**
 - Patching wallplates
 - Adding individual switch ports to a VLAN
 - Configuring single switch ports

- **Environmental Changes** - Environmental changes normally involve the facilities associated with the IT Installation.
 - **Included**
 - Changing facility items such as air conditioning, chilled water, raised flooring, security, motor generators, electricity, and plumbing
 - **Excluded**
 - Replacing UPS's
 - Adding power circuits

4.2 Required Information

Each RFC requires the following information be recorded. The change request may be rejected if any of these items are absent or incomplete:

- Name of Requester (The Requester listed in the ticket should be the person making the change)
- Description of what is being changed
- Related Incident or Request
- Level of potential impact and risk
- Effect the change has on the environment and users
- Reason for the change
- When the change starts and finishes
- Any necessary business unit or departmental approvals, including agreements on implementation date and time
- Change category
- Resources impacted by the change
- Testing performed
- Rollback procedures

4.3 Best Practices for Entering Changes

- Avoid using acronyms. If one must be used, state the meaning of the acronym on the first reference. After defining it, use the acronym as needed.
- Avoid only describing the issue the change resolves. Be sure to state what is being changed to fix the issue.
- Include the name of service(s) affected by a change that may not be evident. Example: if a change is performed on a server that will affect availability of an application or service, note the affected application or service.

4.4 Assessing Change Risk

Risk assessment is broken into four categories described below. Each of these categories should be evaluated as what would happen if the change fails. Each are rated Low, Medium, or High.

4.4.1 Outage Probability

Outage Probability is the likelihood that a service outage will result from implementation of this change.

4.4.2 Impact

Impact measures the effect that this change will have. A large number of users that are minimally impacted or a low number of high profile users that are severely impacted would likely warrant a higher Impact rating. A small number of low profile users who would not notice the change would have would likely warrant a lower Impact rating.

4.4.3 Complexity

Complexity is how difficult the change is to complete. Changes with multiple, difficult steps would likely warrant a higher rating. Changes that require only a few simple steps in order to complete would likely justify a lower rating.

4.4.4 Priority

Priority is the importance of implementing this change. Break-fix changes would likely have a higher Priority. Minor patches would likely have a lower Priority rating.

4.5 Approvals

There are multiple potential approvers of each RFC. The approvers of each change request depends on the risk assessment categories. Following the necessary approvals, the change can proceed to implementation.

4.5.1 Initial Approval

Following submission, all change requests go through Initial Approval by the Requester's immediate supervisor. Initial Approvers have the ability to send a change to the approval boards regardless of the risk assessment. However, the risk assessment may also produce the same result.

Note: The Requester of a change is also the one performing that change. Requester is separate from the Implementer / Assignee but should be the same value.

4.5.2 Technical Advisory Board

Some changes may go to the Technical Advisory Board (TAB) for approval. The TAB evaluates the technical aspects of the change. The TAB's goal is to ensure that all changes meet specific technical guidelines and will not interfere with other services following implementation. TAB Objectives include but are not limited to

- Reviewing requests from Change Advisory Board and Project Management Office that do not match existing service
 - Is there suitable service or offering?
 - Build vs. Buy recommendation/Analysis
 - Determination if request should be a project
- Receiving actions from Change Advisory Board
 - Alternate approaches
 - Risk mitigation
 - Cost determination
 - Level of effort identified
 - Recommendation of approach
 - Cross functional reviews
 - Documentation reviewed and approved

- Reviewing and approving changes
 - Approve “How” not “What”
- Forming subcommittees as deemed appropriate by TAB Chair
- Reviewing unsuccessful changes and making recommendations as appropriate
- Reviewing Routine changes for success/failure and appropriate use
- Technology consulting for ITS Leadership
- Suggesting process improvement recommendations
- Identifying undocumented changes and referring to CAB
- Taking roll of meeting attendees

The TAB normally convenes at 10:00am every Thursday. The deadline for submitting change requests for TAB review is 5:00pm Wednesday.

4.5.3 Change Advisory Board

Once a change has received TAB approval, it goes to the Change Advisory Board (CAB). CAB normally convenes at 1:00pm every Thursday. The CAB gives final approval on all changes. The CAB ensures that each change aligns with business and organizational goals. Objectives of the CAB include but are not limited to

- Reviewing and approving changes
 - Approve “What” not “How”
- Determining if changes should go back to TAB
 - Provide additional actions that are required
- Reviewing sequencing of CAB approved changes and identifying conflicts
 - Manage change calendar
- Reviewing “Closed” and “In-Progress” high risk changes
- Reviewing emergency changes and directing to TAB if questions exist
- Reviewing undocumented changes and taking action
- Taking roll of meeting attendees

4.5.4 Change Blackout Approval

Changes scheduled during a Change Blackout Period require the approval of the department requesting the blackout. This approval, preferably by email, must be documented in the change request. For additional information regarding Change Blackouts, see Section 5.

4.6 Change Types

There are two types of change requests.

4.6.1 Emergency

Emergency changes are those needing to occur immediately to restore a service that is down, severely impacted, or will be severely impacted. Emergency changes do not require approval and should not be designated as such as a means to circumvent or expedite the change process. Submission of Emergency changes will generate notifications to the CAB, the Requesters manager, and will be reviewed in the weekly CAB meetings.

4.6.2 Normal

Normal changes are all other non-Emergency changes.

4.6.3 Routine

Routine changes are pre-authorized, low risk, and relatively common. The process used in executing Routine changes is well documented. Only specific changes may be designated as Routine and those must be approved by TAB and CAB. See Appendix B for a current list of Routine changes.

4.6.3.1 Routine Change Requirements

For a change to be designated as Routine, the following must be true:

- There must be written documentation for the Routine change that contains
 - Steps required to complete the process
 - Rollback procedures if there is a failure
 - Alternative solutions
- There must be three successful implementations of the change using the documentation as written.
- There cannot have been any failures of the change since the three successful implementations.

4.6.3.2 Getting a Change Designated as Routine

Changes that get Routine status must be submitted as a Change Request to TAB & CAB for approval. This Change Request must confirm that there is process documentation; provide previous, successful Change Requests; and verify that no failures have occurred since the three successful implementations.

Following TAB & CAB approval, the approved Routine change will be added to Appendix B.

4.6.3.3 Routine Change Failure

If a Routine change fails despite proper use of the documented process, it loses its status as a Routine change. The failure of a change and whether it maintains Routine status is evaluated by TAB. In order to regain Routine status, the documentation must be updated, noting the changes from the previous version, and resubmitted as a new Routine change. The new Routine change is subject to all of the same requirements.

4.7 Following Implementation of the Change

After a change request has been completed as documented, the Implementer must complete the following tasks:

- Validate the success of the change from the technical aspect.
- Validate the success of the change from the aspect of the affected users.
- Close the Change Request following validation, making any notes as appropriate.

5. Change Blackouts

Change Blackouts are times when it is most critical that departments have specific services fully operational. It is imperative that, during these times, planned outages do not occur.

5.1 Maintenance Window

Standard, non-emergency changes are only to be performed during the Maintenance Window. The Maintenance Window is between 8:00pm until 4:00am, Monday through Friday, and the weekend beginning at 4:00am Saturday through 4:00am on Monday.

Emergency changes can be performed at any time. Affected services should have users of these services notified as soon as reasonable.

5.2 Change Blackouts

Change Blackouts are exceptions to the Maintenance Window that are requested by individual departments. Departments requesting Change Restrictions will need to supply the following information:

- Services required to be fully operational during the Maintenance Window
- Beginning date and time
- End date and time
- Reason for the Change Restriction

During Change Blackouts, no changes are to be made that affect the requested services during the requested dates and times. It is incumbent upon the person performing the change to ensure that it does not affect the services in blackout.

If an Emergency change occurs during a Change Blackout, as much advance notice as possible will be provided to the requesting department. This will depend on the nature of the Emergency change. With certain Emergency changes, there may not be sufficient time to provide advance notice.

5.3 Change Alerts

Change Alerts do not carry any restrictions. They are notice that a department is in a critical time for their operation but only require services outside of the maintenance window. They are meant for a general awareness.

5.4 24-Hour Departments

Any department operating on a 24-hour basis will identify their critical IT services. The identified services will not be affected without the consent of that department.

5.5 Identifying Dates and Departments

There is additional documentation available to identify change blackout dates, the requesting departments, and contacts for those departments.

The Helpdesk Events Calendar contains the dates, departments, and department contacts. It is presently located in SharePoint at the following URL:

<http://sharepoint/its/hd/Lists/Helpdesk%20Events/calendar.aspx>

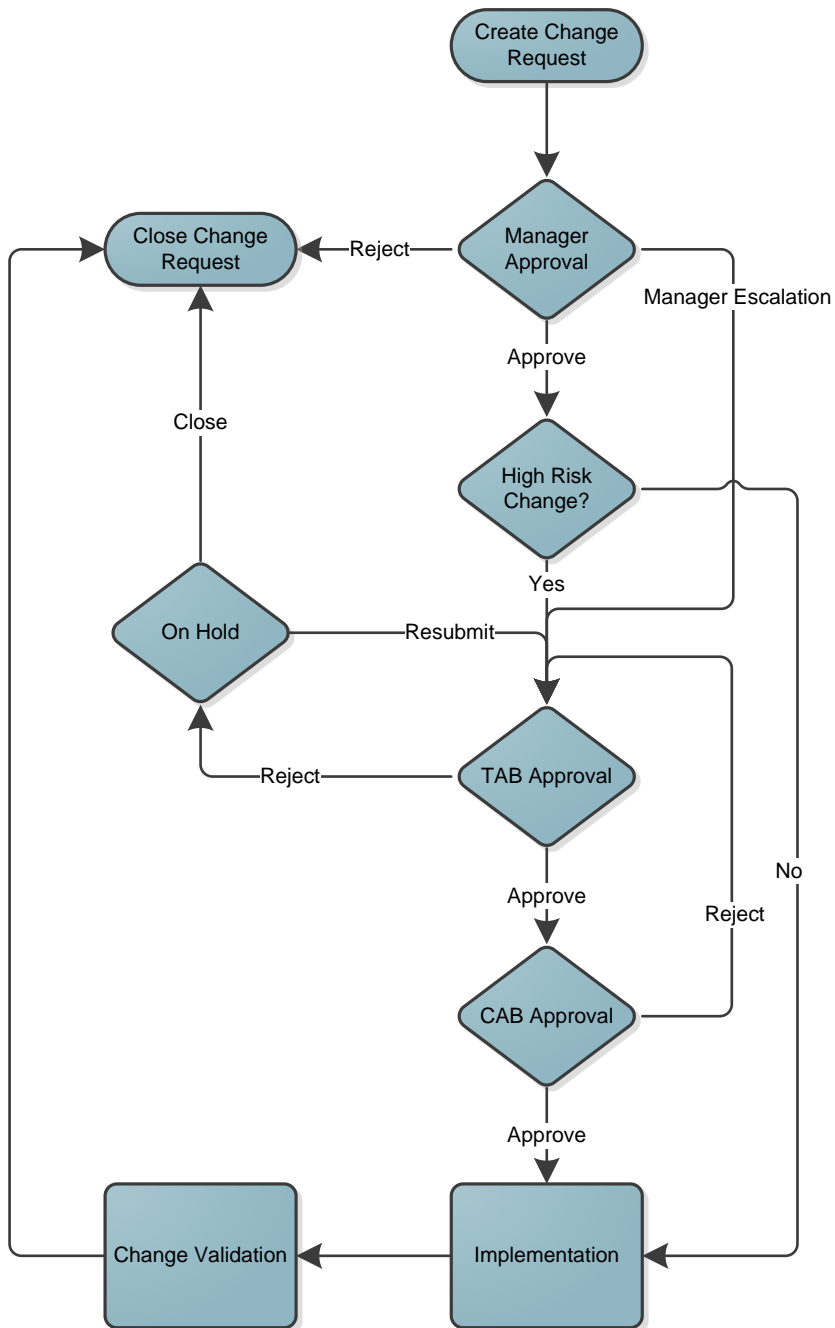
A list of blackout dates, departments, and reasons for the blackout can be found in the following folder:

\\its1\vol2\its_all\Change_Control_Procedures\Change Blackouts

The document is named "Change Req Blackout Dates <year>.docx."

6. Appendix

A. Change Approval Diagram



B. Approved Routine Changes

7. Change Log

v.2.4

- Add section 4.6.3 to describe Routine changes and the process for getting a changed designated as Routine.
- Add Appendix B for approved Routine changes.
- Update Table of Contents
- Update TAB functions to include review of Routine changes

v2.2.9

- Add bullet to Best Practices to include service names
- Adjusted pagination and spacing following addition of the above bullet
- Corrected Change Blackout references that mentioned the old process

v2.2.8

- Add section on Best Practices for entering a change
- Add requirement for a related Incident or Request

v2.2.7

- Replace Change Blackout process with new process

v2.2.6

- Remove “Draft” watermark from cover page

v2.2.5

- Added deadline for change submission
- Added TAB and CAB meeting times
- Updated definition of Impact, changed from Outage Impact
- Updated Emergency changes such that they don’t require approvals

v2.2.4

- Grammar changes, mostly the removal of many “wills” being replaced by present tense verbs
- Removal of P1 review by TAB and CAB
- Reordered Required Information to be from most to least important
- Reversed order of Change Log to have most recent version’s changes at the top

v2.2.3

- Add TAB and CAB function of reviewing P1 incidents
- Add TAB and CAB function of taking roll

v2.2.2

- Add subcommittee formation to list of TAB functions
- Move Appendix to #6 and Change Log to #7

- Under Red Change Blackouts, change “Windows Updates” to be platform agnostic. Now states “regular updates and patches.”

v2.2.1

- Major grammar and list revisions. Actual content and meaning remains the same.
- Add “No” line on flowchart from “High Risk Change?” to “Implementation.”

v2.2

- Added new change management exclusions: new power circuits, add/remove/change cabling, add/remove/change users, web page text content changes
- Added new change management inclusions: add/remove/change batch program execution schedules
- Removed question from Change guidelines
- Expanded SharePoint link to show URL rather than hide it in a hyperlink
- Replace/update cover page
- Added Table of Contents
- Added Page numbers
- Added colors, adjusted formatting
- Expanded description of Emergency Changes to state they shouldn’t be used to circumvent the approval process or because the change was entered too late
- Removed Documentation from the list of changes types to be recorded
- Added Appendix section
- Added Change Approval Flowchart to Appendix

v2.1

- Removed two paragraphs from Objectives section
- Reworded several sections to make document specific to Travis County ITS and only systems that it manages
- Added Section 4.7.3 related to finding more information on change blackouts
- Added text to Section 4.6 on what to do following implementation of a change (previously blank)
- Added section 4.4.4 related to approvals required for change blackouts
- Updated Section 4.3.2 Impact to further describe Impact
- Various grammar and punctuation corrections
- Reworked “What is a Change?” section, now called “Guidelines for Recording Changes.” Has been changed to show Included and Excluded change sections. Exclusions, previously shown in the Scope section, have been moved so that both Included and Excluded changes are in the same place. It also provides some questions for Implementers to ask as a way to evaluate the need to enter a change ticket.
- Added task for TAB to identify undocumented changes and refer to CAB.