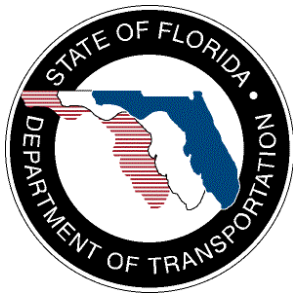


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Change Management Process for the Deployment of ITS in the State of Florida



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1. Introduction

The Florida Department of Transportation (FDOT) has embarked on a program to accelerate the deployment of intelligent transportation systems (ITS) through the expenditure of over \$800 million in statewide managed funds. These funds have been programmed to deploy ITS on the five principal limited-access facilities in the state over a ten-year period with additional funds added each year to keep the ten-year plan horizon. In addition, the FDOT is developing an ITS plan for non-limited-access facilities. Although this ITS plan for non-limited-access facilities does not have a dedicated funding source, it will demonstrate the need to deploy ITS beyond the limited-access facilities.

To support the deployment of ITS, the Traffic Engineering and Operations Office (TEOO), ITS Section has developed standards for field devices, a Statewide Transportation Management Center Software Library System (SunGuide™ Software), as well as a center-to-center (C2C) communications to assure regional transportation management centers (RTMC) will be able to communicate with one other.

Change is an inevitable consequence with the implementation of complex systems such as ITS. Technology is always changing and what was state-of-the-art yesterday is obsolete tomorrow. To ensure that change is implemented consistently from District to District, a statewide process needs to be established.

2. Purpose

The purpose of Change Management is to ensure that changes to ITS will be implemented through a controlled process which takes into consideration how the proposed change will affect statewide systems which include the following areas: ITS Architecture, ITS Standard Specifications and ITS Software.

3. General Information

A Change Management Board (CMB) has been established to manage change to ITS for the State of Florida. The CMB is responsible for the oversight of the change process for limited-access facilities that has been funded utilizing statewide managed funds set aside for the deployment of ITS, and managed by the TEOO's ITS Section. However, at the discretion of the FDOT / CMB, other facilities can be brought into the purview of the CMB.

One of the purposes of the ITS plan for non-limited-access facilities is to bring some visibility to the need for ITS on non-limited-access roadways. Utilizing the change management process for non-limited-access facilities will help ensure that the proposed change will not hinder integration of these facilities into a statewide ITS network.

4. Change Management Board Organization

The CMB organization is composed of two components. The first is the CMB itself. The CMB is responsible for monitoring the deployment of ITS for the State of Florida, reviewing requests for changes in ITS that have a statewide impact, and determining the disposition of the change request.

The second component is the Technical Review Committee (TRC). The TRC is responsible for providing a technical review of change requests and for providing a recommendation to the CMB. The TRC is convened at the discretion of the CMB and the makeup of the TRC is tailored to meet all change requests received from the CMB.

4.1 Change Management Board

The CMB membership consists of a representative from each of the seven Districts, the Florida Turnpike Enterprise (FTE), and three members from the Central Office. A representative of the Central Office held the chair of the CMB for the first two years beginning at the CMB meeting held on March 9, 2004. The Chairperson will change every two years with the new Chairperson determined by the CMB as a normal Board action. The sitting Chairperson shall request nominations during their second to last meeting and vote on a new Chairperson during the last meeting for the next term of two years. If no nominations are presented, the CMB can ask the sitting chairperson to have their term extended for either a one or two year term. The CMB will determine the new chairperson if nominations were made as the first item of business on the last meeting and/or teleconference of the term for the sitting chairperson. The determination of the new chairperson shall be made by the result of a majority vote.

District and FTE Traffic Operations Engineers will appoint the CMB members from their respective organizations. The Central Office TEOO Manager will designate the Central Office representatives to the CMB.

There is no established term of service for CMB members. However, it should be recognized that for the CMB to be successful, each member must be committed for the long run. Representatives should be prepared to serve a minimum of two years on the CMB. If any CMB organization has a change in its representation, a replacement should be appointed within two weeks and the CMB Chairperson is to be notified in writing of the change.

4.2 Technical Review Committee

The TRC will be established by the CMB and will provide a review of the ramifications of a change request, should the CMB need the additional expertise. The CMB will call upon experts within the TRC to review the technical issues associated with a change request and to make a recommendation to the CMB. The TRC size should consist of one

representative from each CMB organization and can be comprised from either the Public or Private sector which is determined by each CMB organization. The selection of the TRC representative should be based on technical knowledge of the areas for which the CMB has responsibility. The TRC will be given directions on a change request basis regarding what they are required to deliver to the CMB and when it is needed.

5. Voting Process for the Change Management Board

Each of the seven Districts, FTE, and the Central Office has one vote apiece. The three members from the Central Office will confer during the voting process and submit one vote that represents the consensus of the Central Office members present.

Seven (7) voting members of the CMB must be present to constitute a quorum. Central Office members of the CMB will be considered as only one voting member for the purposes of establishing a quorum.

Six (6) votes are required to approve a change request that has been submitted to the CMB.

6. New Membership to the Change Management Board

The CMB recognizes that the Board is not a static organization regarding membership and Board members recognize that the membership may be expanded as other agencies join the FDOT in supporting statewide initiatives. Inclusion of a representative from another agency will be at the Board's discretion and would be taken up as a normal Board action. The inclusion of a new Board member would be at the request of a current Board member and the vote must carry with a seven out of nine. The rule of thumb is that if an agency is contributing funding to a statewide initiative then they would be eligible to become voting Board member.

The Central Office, with the concurrence of the Chairperson of the Board, will update the CMB Process document and the vote to add a new member will also address the changes to the Process Document. It is anticipated that the only potential change to the Process Document will be the voting process. Increased membership may affect the number of members that need to be present for a quorum and that are needed to approve a change.

7. Non-voting Membership to the Change Management Board

Decisions made by the CMB may have an effect on how other stakeholders within the FDOT, as well as outside the FDOT conduct business. To better represent these stakeholders' interests, non-voting memberships will be offered and composed of two levels. The first level will be short-term membership allowed on an issue-by-issue basis and the second level will be long-term membership that addresses many issues. Non-voting members will act in an advisory role only. A list of Non-voting Members shall be kept current and be distributed to the CMB as part of the documentation prior to

each meeting. This list shall consist of the following: Name; Organization; date of long-term appointment; and, description of role as a long-term member.

7.1 Non-Voting Membership

Non-voting membership to the CMB is determined by the voting members of the CMB by two methods: (1) as a normal CMB recurring action item or (2) based on the issues to be addressed by the CMB on a case by case basis. It is the responsibility of the voting members of the CMB to invite non-voting members to participate. Temporary members of the CMB should have a stake in the decision that will be made and/or be able to provide relevant input to the decision making process. Voting members of the CMB shall introduce the short-term non-voting members to the CMB at the start of each meeting. An evaluation of Non-Voting Membership shall be performed on an annual basis during the same meeting that the CMB Chairperson would be voted on. Non-Voting Membership may be drawn from ITS Florida, FHWA, Public Agencies, Educational Organizations and Consultant/Contractor staff and must be actively involved in deploying ITS in Florida.

8. Consultant Support

Central Office TEOO, through the use of the ITS General Consultant, will be responsible for all of the administrative activities associated with the operation of the CMB. Consultant support will be available to assist the CMB with administrative requirements (i.e. minutes, documentation, database development, scheduling of meetings/teleconferences, etc.), the TRC with technical reviews, and determining if the CMB needs to act on a change request. General Consultant support will be provided through a Task Work Order.

9. Meeting Frequency

The CMB will meet a minimum of three times per year, in conjunction with the ITS Working Group Meetings. It is anticipated that additional meetings will be necessary on an as-needed basis to address issues that cannot be postponed until the next ITS Working Group Meeting. The Chair, in coordination with the CMB members, will establish the time and circumstances under which the CMB will convene. Convening the CMB may be accomplished through the following methods: teleconference; videoconference; Web cast; or a face-to-face meeting, depending on the nature of the issue to be discussed. *Ad hoc* meeting locations will be rotated between Districts as much as possible to provide equitable travel requirements for the Districts.

The TRC will be convened as needed. It is anticipated that the coordination of technical reviews by individual committee members or their appointees and the development of a recommendation for the CMB can be arrived at through a teleconference. To address complex issues, the TRC may chose to meet face-to-face to arrive at a recommendation

for the CMB. At the discretion of the CMB, the TRC may be required to present its recommendation to the CMB in person.

The Chairperson and Central Office will review all change requests as they are received and come to a consensus as to whether the change request should go to the TRC and/or CMB through a teleconference.

10. Length of Meetings

Meeting length will depend on the issue(s) to be resolved. It is anticipated that face-to-face meetings will last no longer than a day. A worst-case scenario will require an overnight stay. For issue(s) that can be resolved through a teleconference, videoconference or Web cast it is anticipated that the length of the remote meetings will last no longer than half a day (four hours). A bridge line will be scheduled for all remote meetings to allow CMB members to go to lunch and dial back in to wrap up any remaining issues, should the remote meetings go longer than the half-day period.

11. Documentation of Change Management Board Activities

Documentation of CMB activities will be in the form of minutes taken at the CMB meetings and detailed documentation of the change request process. Minutes, agendas, and documentation, etc. will be posted on the TEOO ITS Program Web site within two weeks of the meeting date.

11.1 CMB Minutes

Minutes will be taken at all CMB meetings and will provide an overview of the discussions that took place during the CMB meeting as well as any decisions that were made by the CMB. Action items will be noted with the individual(s) responsible for the action item and the action item tracked through to closure.

11.2 Change Requests

Documentation of change requests will provide details on the change requested, an analysis of the implication the change will have on the system, and the disposition of the change request. Each change request will be assigned a unique identification number, once the change request has been received by the CMB, to facilitate tracking of the change request.

Documentation surrounding the change request should include the following:

- Date change request was submitted;
- Requestor organization;
- Point of contact (name, phone number, email address);
- Type of change;
- Description of change;

- Reason for change;
- Priority (urgent, routine); and,
- Time set to dispose of the change request.

Documentation surrounding the analysis of the implication that the change request will have on the system should include the following:

- Date analysis was performed;
- Organization responsible for the analysis;
- Point of contact for the analysis;
- Details of the analysis performed; and,
- Analysis results.

Documentation of the disposition of the change request will include the following:

- Date the CMB addressed the request;
- Length of time it took to come to a disposition; and,
- CMB's disposition (approved, approved with modifications, disapproved).

12. Change Management Process

Change requests will be submitted by the TEOO, or by FDOT District Offices to include FTE to the CMB Chairperson. Change requests may also be initiated by consultants and/or contractors doing business with the FDOT. However, the actual change request must be submitted by the FDOT or CMB to the CMB Chairperson. The change request should have, as part of the request, a detailed explanation of the reason for the change.

The change request will go through an initial screening by the Central Office and the Chairperson to determine its suitability for review by the TRC and/or the CMB. If a detailed explanation of the reason for the change request is not provided, the Chairperson may contact the requestor to provide details on the reason for the change request. General criteria for passing the change request on to the CMB is: whether the change request has statewide significance; whether the change will affect the operation of legacy systems; and whether the change request has the potential to provide an improvement to a system or correct a deficiency. All program areas pertaining to the deployment of ITS will fall under the purview of the CMB. The Chairperson and Central Office will evaluate the change request and determine if it is an appropriate program area to be addressed by the CMB. If the change request is determined to be appropriate, it will be sent on to the CMB for review. The CMB will provide final guidance on the process to be used by the TRC in determining what requests should be brought before the CMB as one of the initial actions of the CMB.

The Chairperson and Central Office will work with the initiator of a change request to establish the time frame for taking action on the request. The time frame will be established taking into account the nature of the request (critical vs. non-critical), whether a TRC needs to be convened, and the work load of the CMB. The Chairperson will also

provide a recommendation, based on the review of the change request, to establish a TRC. Should multiple requests for change be received simultaneously, the Chairperson will establish the priority for evaluating the requests.

If a change request is rejected by Central Office and/or the Chairperson, the requestor can either reevaluate the request, modifying as necessary, and resubmit, or discontinue pursuit of the change request.

The CMB will evaluate the change request and determine if the formation of a TRC will be necessary. The CMB can form a TRC if the CMB determines it has the expertise and knowledge to act on the change request. The ramifications of the change will be evaluated. Based on the review, the CMB will determine whether to accept or reject the change. If a TRC is formed, the TRC will conduct an analysis of the change request and make a recommendation to the CMB to accept or reject the change request.

Upon approval of the change request, the change will be implemented and the baseline database updated to reflect the change. Figure 1 is a flow chart showing the change request process.

13. Annual Review

On an annual basis, the CMB will review the changes that have been previously approved and make an assessment of the ramifications of those changes. Based on the actual experience gained from the change, the CMB will determine if the decision to make the change was correct and whether to continue with the change.

14. ITS Deployment Database

To support the development and maintenance of the *Ten-Year ITS Cost Feasible Plan*, the TEOO's ITS Section has developed an ITS deployment database. This database provides an inventory of existing, funded, and un-funded deployments on the Florida Intrastate Highway System (FIHS); serves as an important tool for tracking the progress and location of ITS deployments; and maintains an inventory of ITS devices deployed, as part of the statewide projects.

The database tracks the status and location of all existing, funded, and un-funded projects identified in the statewide ITS Needs Plan. This database contains detailed information on the implementation status of each project phase and provides a historical record of completed ITS projects. As projects are completed, they are reclassified as existing projects and are archived for historical reference as well as for project life-cycle tracking.

The database also tracks the type, number, and location of each ITS device (including communication infrastructure devices) that is deployed as part of the existing, funded, and un-funded projects. The devices contained in the database include closed-circuit television cameras (CCTV), dynamic message signs (DMS), vehicle detector stations, video image detectors, highway advisory radio [HAR (including road signs and

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beacons)], road weather information systems (RWIS), ramp meters, emergency stopping sites, fiber optic communication cables, analog lines, communication hubs, voice over Internet Protocol (VoIP) Routers, Lane Control Devices and Fiber backbone, in addition to locating all existing and planned RTMCs. Devices are presently located by roadway mileposts. The CMB will discuss the location requirement of the devices and determined if cross-referencing the milepost location with global positioning system (GPS) coordinates will be beneficial. Should the CMB determine it a benefit to have GPS coordinates in the database, the ITS General Consultant will work with the Districts to determine what GPS information is available and to map out a process to obtain GPS coordinates for those devices that do not have coordinates.

The Districts and FTE will be responsible for working with the TEOO's ITS Section in keeping the database updated.

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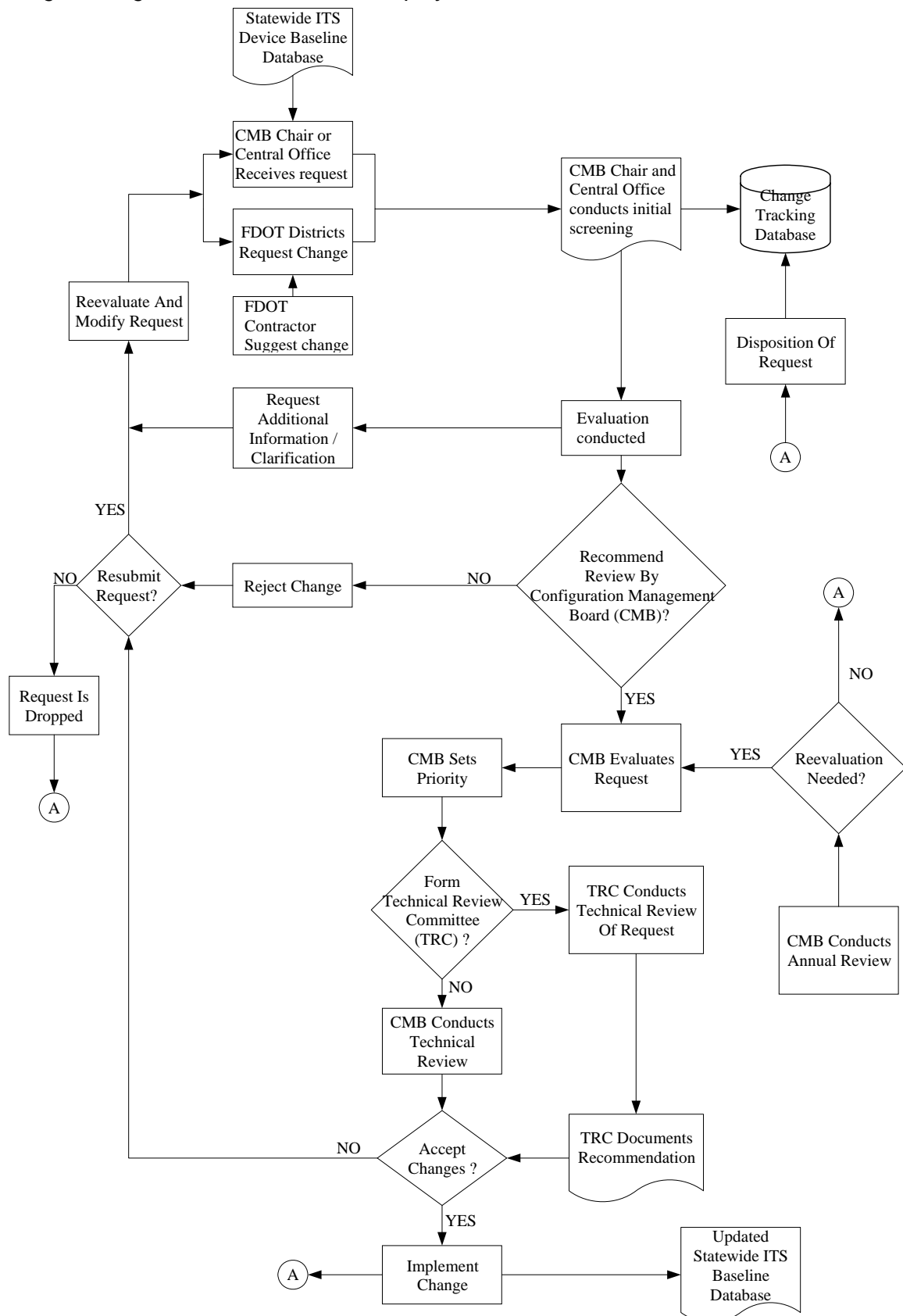


Figure 1: Configuration Management Board (CMB) Process Flow Chart