

## Santa Barbara County Policy

### Commissioning and Retro-Commissioning Policy for County Facilities

#### Policy Statement

The County of Santa Barbara will promote energy efficiency and long-term sustained building performance by commissioning new construction and major renovation projects, and by retro- and re-commissioning existing buildings.

- 01) This Policy establishes a Commissioning Oversight Committee (COC) that will be chaired by the County Capital Facilities Planning Manager, with representatives from the County's General Services Department and facility contacts with respective departments occupying the building, as appropriate. The COC is the expert and authority in recommending County commissioning projects and communicating matters with County departments and the Board of Supervisors. Implementation guidance to be developed upon adoption of this Policy will define the structure and membership of the COC.
- 02) This Policy directs the COC to establish a guideline for implementation of this policy that sets forth processes, schedules and budgeting tools.
- 03) The General Services Department shall plan for commissioning of buildings across County departments and shall include budgeting allowances for commissioning processes in their annual budget planning in accordance with this Policy<sup>1</sup>.
- 04) This Policy establishes minimum acceptable criteria for the commissioning of County buildings. Where differences exist between California statutes and regulations, County adopted codes and relevant ordinances and this Policy, the more stringent requirement shall apply. This Policy requires that for all applicable projects, commissioning be performed in accordance with all adopted codes and relevant ordinances.
- 05) This Policy will require that all County owned and operated buildings report energy generation and utility consumption<sup>2</sup> through the County's Utility Manager System (ECAP). Some departments currently do not provide this reporting, making it difficult for the County to get a complete picture of its operating cost.

---

<sup>1</sup> Commissioning shall be carried out in accordance with Title 24, Parts 6 and 11

<sup>2</sup> This includes utilities consumed by the County but paid for by others as in a County leased and tenanted building and facilities (e.g. under a full-service lease agreement.) This includes all utilities consumed by all County Departments (structures, facilities, equipment, etc.) at the meter level.

## 1. New Construction and Major Renovation Commissioning

The County will commission all new construction and major renovations in occupied and unoccupied buildings and facilities in accordance with the following criteria:

- 01) All new construction and major renovation projects shall be commissioned.
- 02) All new construction and major renovations that are equal to or exceed 50,000 square feet or involve complex mechanical systems<sup>3</sup> shall be commissioned by an independent certified third-party commissioning agent. Project scope shall comply with the requirements of all County adopted codes and ordinances in addition to the requirements of this Policy as set forth by the COC.
- 03) All new construction and major renovations less than 50,000 square feet may be commissioned by either an independent certified third-party commissioning agent or County staff, at the discretion of the COC. In either case the minimum outcome is documented functionality verification and document review by a COC representative.
- 04) Projects seeking an American National Standards Institute, (ANSI) or other green building certification (e.g. U.S. Green Building Council's (USGBC) Leadership in Energy & Environmental Design (LEED) certification) shall be commissioned by an independent certified third-party commissioning agent or as required by that standard.
- 05) All system and equipment retrofit projects that replace major capital equipment or materially impact sequences of operation, and qualifying tenant improvement projects, shall be commissioned end-to-end including front-end computer integration<sup>4</sup>. Commissioning may be performed by either an independent certified third-party commissioning agent or County staff at the discretion of the COC.

## 2. Existing Building Retro-Commissioning

The County General Services Department will assess all existing buildings on an on-going basis for applicability of the retro-commissioning process. Buildings that meet the following conditions shall be considered priority candidates for commissioning and review for determination by the COC:

- 01) Buildings greater than or equal to 10,000 square feet.
- 02) Buildings with U.S. EPA ENERGY STAR rating less than 75<sup>5</sup>, as generated by ENERGY STAR's Portfolio Manager.
- 03) Buildings with inefficient systems or controls<sup>6</sup>.

---

<sup>3</sup> As defined by the 2013 Building Energy Efficiency Standards, Title 24, Part 6.

<sup>4</sup> Front-end computer integration means all applicable or connected building and County energy management or building management control systems and the County's Maintenance Connection – Service Request software.

<sup>5</sup> Buildings with ENERGY STAR ratings greater than 75 are in the top 25 percentile for energy performance when compared to similar type buildings.

<sup>6</sup> Assessments of such are subject to concurrence by the Commissioning Oversight Committee.

04) Buildings identified by the COC during the annual selection process.

05) All County buildings and facilities that operate 24 hours per day.

The County will implement all retro-commissioning measures that will be identified in a retro-commissioning *List of Findings*; projects having payback periods of less than 12-months, as determined through an economic analysis approved by the COC.

### 3. Existing Building Re-Commissioning

The General Services Department shall assess all existing previously commissioned buildings on an on-going basis for applicability of the re-commissioning process. Buildings will be re-commissioned when the following conditions apply, or as determined by the Commissioning Oversight Committee, to maintain the integrity of the buildings' energy consuming systems and energy savings persistence<sup>7</sup>:

01) More than 50% of the building is renovated as part of a minor renovation or tenant improvement.

02) Upon a change in building use or material impact to building function or energy consuming systems as determined by the County Energy Manager.

03) Major energy consuming systems or controls are replaced or retrofitted.

04) Increase in building tenant complaints due to improper building systems and controls.

05) Increasing trend in building energy consumption over 12 month period by more than 10% when normalized for weather and occupancy conditions (indicating a possible issue).

06) As required to certify, maintain, or recertify a building for an ANSI or other green building certification (e.g. USGBC's LEED Existing Buildings Operation and Maintenance certification).

07) As required to maintain rating with U.S. EPA ENERGY STAR Label for Commercial Buildings program.

### 4. Requirements for Major vs. Minor Renovations

**Major:** A major renovation for purposes of this policy is a project which materially modifies the building's envelope, mechanical, electrical, or plumbing systems. It may be a building infrastructure or tenant improvement project. These projects usually involve the alteration of walls, ceilings, and seating arrangements or making material changes to the building or tenant infrastructure systems.

---

<sup>7</sup> Approximated at a 5 year re-commissioning cycle.

**Minor:** A minor renovation for purposes of this policy is a project where only finishes or furniture are modified and there are no substantial changes to seating arrangements and no changes to walls, ceilings, or system zones. Minor renovations will not require commissioning as “new construction” but will still be taken under consideration for retro- or re-commissioning at the discretion of the COC. Where minor renovation projects are identified for the commissioning process, they shall conform to the full scope of this Policy.

## 5 Basic Owner Project Requirements

Every County project shall have a documented Owner’s Project Requirements (OPR) which outlines minimum established requirements for all new construction and major renovation commissioning and existing building retro- and re-commissioning projects. General Services Department shall develop the OPR on behalf of the occupying department. This guarantees a minimum standard of care is performed for all commissioned projects. This Policy requires end-to-end functionality that includes: performance testing, demonstration, witnessing, and documentation of building systems and equipment. End-to-end means that all systems are tested and verified to meet the OPR and are fully integrated into all required building systems; including but not limited to automatic temperature controls, fire alarm, fire suppression, security systems, and those regulated by California statutes and regulations, County adopted codes and relevant ordinances and other applicable standards.

These criteria are irrespective of project scope and apply to all third-party and in-house commissioned projects:

- 01) Owner Project Requirements shall be clearly established for end-to-end functionality (e.g. control, monitoring, alarming, and performance) of all systems and equipment under all modes of operation (e.g. occupied, unoccupied, standby, emergency operation, etc.).
- 02) A COC representative (i.e. Facility Group or Capital Projects staff) shall witness select vendor and contractor equipment start-up tests.
- 03) A COC representative shall be provided copies of selected vendor and equipment start-up reports and documentation a minimum of 7-days prior to functional performance testing, for review and approval.
- 04) The commissioning agent shall demonstrate to the COC representative and a building occupant representative through functional performance testing that all systems and equipment satisfactorily meet the OPR under all modes of operation.
- 05) A COC representative and a building occupant representative shall witness and approve all functional performance testing.
- 06) The COC representative shall document in writing to the Department and County Energy Manager that all systems and equipment have been tested and demonstrated to comply with the OPR and witnessed by County staff. At a minimum, 1) the system and equipment that was demonstrated, 2) who was present, and 3) when the demonstration occurred should be documented.

## 6. Operational and Maintenance Retrofits Requirements

### 6.1 Emergency Replacement Systems

The emergency replacement of existing building equipment and systems are exempt from the commissioning requirements of this Policy, to the extent that systems shall be replaced with no-delay and the requirement for building assessments and determination by the COC and the “standard” commissioning protocols established within this Policy are relaxed.

All standard County operating protocols for responding to emergency operations and maintenance replacements shall be adhered to and shall take precedence over this Policy where they affect the life-safety and welfare of the building’s occupants and community residents. Compliance with this Policy for emergency repairs still requires:

- 01) The witness of functional performance testing of all emergency replacement equipment by County staff.
- 02) The Capital Projects Project Manager shall provide the COC a copy of the maintenance ticket and document in writing to the Department and County Energy Manager that all systems and equipment have been tested and demonstrated to comply with the Owner Project Requirements and witnessed by County staff. At a minimum, the documentation will include the following information:
  - the system and equipment that was demonstrated,
  - who was present, and
  - when the demonstration occurred.

### 6.2 Unplanned Replacement of Systems and Equipment

The replacement of all unplanned equipment and systems are subject to the commissioning process; either new construction or major renovation commissioning or existing building retro- or re-commissioning process if proper triggers are identified. Upon determination of failed equipment, the following protocol shall be followed:

- 01) The County Facilities Manager shall assess the system or equipment condition and communicate the replacement requirement to the COC via a group email.
- 02) The COC has 10-business days to respond to the County Facilities Manager with requirements for system and equipment commissioning.

## 7 Suggested Budgeting Approach

### 7.1 New Construction and Major Renovations Commissioning and Existing Building Re- and Retro-Commissioning

The County Five-Year Capital Improvement Program (CIP) budget includes line-item budgeting for funded and unfunded projects. The *Major Improvement to Building Facilities* data will be used to project estimates for the cost of commissioning for Major and Minor Renovation under the purview of this Policy. For existing buildings, the goal shall be to retro-commission the

County's largest 9 buildings (buildings greater than 30,000 sq.ft.) over the five-year period immediately following the adoption of this Policy. In subsequent years, the General Services Department will plan for retro-commissioning to be completed at a rate of 20% for the remaining County owned and operated buildings greater than 10,000 sq.ft., with retro-commissioned buildings re-commissioned on average every 5 years. Table 1: Initial Commissioning Budget Assumption Matrix can be used for estimating retro-commissioning and re-commissioning cost.

## 7.2 Funding Sources

01) **New Construction** - Funding for approved capital projects; new construction and major renovation; shall be appropriated by the occupying Department from an appropriate funding source or as otherwise appropriated by the Board of Supervisors.

Departments shall update their annual budget to include funding for all anticipated new construction and major renovation projects, and shall include the cost of commissioning for those projects.

02) **Existing Buildings** - For existing building retro- and re-commissioning projects, as selected by the COC, General Services is currently identifying types of funding mechanisms for the commissioning projects planned for each year. Funding of these costs will include the costs of commissioning (e.g. external resources, equipment, etc.) and internal departmental staff resources required for implementation with initial estimates taken from Table 1 below and final budgeting numbers from building assessments provided by General Services or other professional third-party.

General Services will have available to it the COC's review of their commissioning line-item budgeting allowance and will provide recommendations for the funding methodology to the CEO, Auditor-Controller and Board of Supervisors during the 2016-2017 budget process.

**Table 1<sup>8</sup>: Initial Commissioning Budget Assumption Matrix**

Service	Cost for Office Space Per sq.ft.	Cost for 24 Hour/Essential Service Facility Per sq.ft.
New Construction and Major Renovation Commissioning	\$1.00 - \$1.30	\$1.00 - \$1.30
Minor Renovation Commissioning	\$0.50 - \$0.65	\$0.50 - \$0.65
Existing Building Retro-Commissioning	\$0.13 to \$0.27	\$0.41 to \$0.45
Existing Building Re-Commissioning	varies	varies

For retro- and re-commissioning projects it's possible to further quantify fee and reduce commissioning cost by: 1) contacting a contractor to perform a site assessment and 2)

<sup>8</sup>Values in table will be revisited annually by the Commissioning Oversight Committee to reflect calculated rates from previous year projects and industry pricing.

leveraging other commissioning projects in parallel for economies of scale within departments or across the County portfolio. For new building projects with limited funding available for commissioning, General Services and all other Departments shall modify the project budget to allow for proper system commissioning. As an example, one such modification could be reducing or eliminating discretionary building costs such as higher cost finishes or aesthetic features.

### **3.2 Funding Mechanisms**

A funding mechanism will continue to be investigated and documented by General Services' staff upon adoption of this Policy with the goal of obtaining concurrence from the CEO and Auditor-Controller prior to submission of the 2016-17 County Departmental budgets. The primary goal and anticipation of the funding stream and the commissioning policy is that energy savings realized from the commissioning will over time, reduce costs in an amount at least equal to the cost of the commissioning.