

**For Facility Managers,
Risk Managers, and
Financial Managers**

Part

Planning and Managing the Process for Earthquake Risk Reduction in Existing Hotel and Motel Buildings

Introduction

Part B of this manual is written specifically for hotel and motel building facility managers, risk managers, and financial managers concerned with the seismic safety of their buildings. These managers may be on the owner's staff, operator's staff, or both. The organization's senior management may have requested you, the manager, to make a recommendation to address seismic safety in hotel and motel buildings or may have made the decision to address it, or there may already be a seismic safety program in place. Part B describes when and how specific activities that will accomplish the goal of seismic risk reduction can be introduced into an ongoing hotel and motel facility management process, regardless of how simple or sophisticated that process is. Part B also provides the framework and outline that can be used by the facility managers, risk managers, and financial managers in developing and communicating their recommendations to senior management.

An incremental seismic rehabilitation program is one of several seismic risk reduction strategies that can be implemented in hotel and motel buildings. It can be implemented separately or in combination with other seismic risk reduction actions. If you determine that such a program is appropriate for your organization, the planning and implementation of incremental seismic rehabilitation should be integrated into the facility management processes and integrated with other seismic risk reduction actions that will complement it or support it.

Part B of this manual is applicable to organizations that own hotels and motels and/or that operate them. Where differences apply to these different types of organizations, it is noted in the text.

In Brief

Planning for earthquake risk reduction in hotel and motel buildings requires a coordinated and integrated effort by facility managers, risk managers, and financial managers of both the owner and operator organizations.

Facility Managers

B.1 Integrating the Efforts of Facility Management, Risk Management, and Financial Management of Owners and Operators

Preparing an analysis of a hotel and motel building owner's and/or operator's earthquake risk reduction needs, and planning and managing such a process, benefits from an integrated effort by the organizations' respective facility managers, risk managers, and financial managers, or by the administrators charged with those respective responsibilities. Such an integrated effort may be a departure from current practices, but collaboration is the key to improving safety cost-effectively and with a minimum of disruption.

Facility managers currently carry out their planning activities by considering the parameters of market conditions, area demographics, and the physical condition and projected useful life of existing hotel and motel buildings. Often they consider pressing social issues such as physical security and accessibility. Some of these issues become federal or local government mandates, such as asbestos and lead abatement, energy conservation, or accessibility compliance. Sometimes facility managers consider the risks to hotel and motel buildings from natural disasters such as earthquakes or windstorms. In general, the owner's facility managers are concerned about the overall condition of the assets (such as structural condition and indoor air quality) while the operator's facility managers are concerned about interior design and the functioning of the asset as a hospitality facility. Both parties have a stake in earthquake risk reduction, and their roles and participation will overlap.

Risk Managers

Risk managers, relatively recent additions to many hotel and motel owners' organizations, have long held key positions on hotel operators' organizations. They carry out planning activities by considering three aspects: risk identification, risk reduction, and risk transfer. The latter generally involves the purchase of insurance. Currently, hotel and motel operator risks are classified into four broad areas: liability risk, larceny risk, employee risk, and facility and environmental risk. Hotel and motel owners generally share facility and environmental risk with the operators. Hotel *operators'* risk managers may consider the risks to hotel and motel buildings and their occupants from natural disasters: however, rarely do *owners'* risk managers consider these risks. Rather, they tend to assume that they are addressed by building codes and similar regulations.

Financial Managers

Financial managers currently deal with facilities by controlling and managing maintenance budgets, capital improvement budgets, and insurance budgets. These budgets are usually subject to the agreement between the hotel owner and operator. The respective facility managers and risk managers

present the demands on these budgets to the financial managers, but rarely are the potential tradeoffs among these budgets considered. The costs and benefits of various options of facility risk management are rarely explicitly addressed.

Addressing the problem of earthquake risk reduction requires establishing active communication among the three management functions within both owner and operator organizations, and coordinating activities into an integrated planning and management effort. The sharing of facility risks between owners and operators will have to be understood and clearly defined. Facility and risk managers will have to consider facility risk, and financial managers will have to consider the costs and benefits of various options for managing facility risk. Specific recommendations on implementing such an effort are provided in the following sections.

B.2 Integrating Incremental Seismic Rehabilitation into the Facility Management Process

B.2.1 A Model of the Facility Management Process for Existing Hotel and Motel Buildings

The typical facility management process for existing hotel and motel buildings consists of eight phases of activities: Acquisition, Change of Management, Redevelopment, Current Building Use, Planning, Maintenance & Rehabilitation Budgeting, Maintenance & Rehabilitation Funding, and Maintenance & Rehabilitation Implementation. Each phase consists of a distinct set of activities as follows:

Acquisition: due diligence (by owner)

Change of Management: due diligence and redevelopment standards (by operator)

Redevelopment: capital improvement (by operator)

Current Use: facility occupancy, facility operation, facility maintenance, and facility assessment (by operator and owner)

Planning: strategic planning and facility planning (by operator and owner)

Budgeting: capital budgeting, maintenance budgeting, and insurance budgeting (by operator and owner)

Funding: financing of capital, maintenance, and insurance budgets (by operator and owner)

Implementation: capital improvement and maintenance (by operator and owner)

This process is sequential, except that the first two—acquisition and change of management—can occur in either order, or simultaneously. Furthermore, change of management can occur any time in the process during the current building use phase. The process progresses from acquisition or change of management through implementation of rehabilitation in any given building. An owner or operator of a large inventory of buildings is likely to have ongoing activities in all of these phases in different buildings. The process is illustrated in the following diagram. Appendix I to this manual, Additional Information on Hotel and Motel Building Facility Management, contains a discussion of the specific phases and the activities therein for owners and

In Brief

Eleven specific activities can be added to the current facility management process to implement an incremental seismic rehabilitation program.

operators seeking further detail on the facility management process. This is a generalized model subject to local variation.



B.2.2 Elements of an Incremental Seismic Rehabilitation Program

The following 11 activities are considered essential elements of an incremental seismic rehabilitation program for hotel and motel buildings, and can be added to the facility management process by facility, risk, and financial managers who implement such a program:

B.2.2.1 Due Diligence Analysis

Due diligence analysis is carried out by the hotel and motel building owner before acquisition of an existing property and by the hotel and motel operator when management of the property changes. In regions of higher and moderate seismicity, due diligence should include a probabilistic analysis of potential earthquake risks. Such an analysis considers damage from earthquakes of all levels of intensity, and will provide information on seismic vulnerabilities in the building. The owner and operator will likely have different perceptions of the relative importance of different seismic vulnerabilities. The owner is likely to focus on reducing earthquake damage to buildings, while the operator is likely to focus on liability for earthquake deaths and injuries to guests and staff. If the building is acquired or the management changes, the due diligence analysis will provide information for the initiation of a full seismic assessment. Probabilistic analysis, because of its detail and scope, will be more expensive than more simplistic Probable Maximum Loss (PML) analysis.

B.2.2.2 Operator Risk Reduction Standards

Hotel and motel operators are likely to have well-defined risk reduction standards derived from their perceived liabilities related to potential hazards. In regions of higher and moderate seismicity, these standards may address seismic risk reduction. If hotel management changes, the new operator will include implementation of its risk reduction standards in its agreement with the owner. These standards may lead to the initiation of a full seismic assessment.

B.2.2.3 Initial Integration Opportunities

Even if seismic rehabilitation is not among the capital improvements being undertaken in the redevelopment phase following a hotel acquisition or a change in hotel management, and even though seismic screening and evaluation may not have taken place prior to the determination of redevelopment phase capital improvements, there may be some seismic rehabilitation increments that can be identified with minimal evaluation and analysis (for example, parapet and gable bracing or anchoring of mechanical equipment). Depending on the nature of these increments, it may be possible to integrate them with specific capital improvements being undertaken in this phase. Part C, Section C.2 should be used to identify such integration Opportunities.

Incremental Seismic Rehabilitation

*Element 1
Due Diligence Analysis*

Incremental Seismic Rehabilitation

*Element 2
Operator Risk Reduction Standards*

Incremental Seismic Rehabilitation

*Element 3
Initial Integration Opportunities*

B.2.2.4 Seismic Screening

Following building acquisition and initial redevelopment, seismic screening of the owner’s or operator’s hotel and motel building inventory is the first step of the incremental seismic rehabilitation process. Seismic screening procedures can be incorporated into other facility assessment activities. Begin with a determination of the status of the archival records. If building plans are available, a document review for the determination of building structure types is the first step in seismic screening. The following chart can be used to obtain an overall view of seismic concerns based on the seismic hazard map in Part A.

Level of Seismic Concern by Typical Building Type	Level of Seismic Concern by Building Location*		
	Green	Yellow	Red
Wood Frame		Low	High
Steel Frame		Low	High
Concrete Frame	Very Low	Medium	Very High
Unreinforced Masonry	Low	High	Very High

Patterned after recommendations developed by Dr. Charles Scawthorn for the California Seismic Safety Commission’s *Earthquake Risk Management: A Toolkit for Decision Makers*.

* Locations refer to the seismic hazard map in Part A, Section A.1.

The Federal Emergency Management Agency (FEMA) has developed FEMA 154, *Rapid Visual Screening of Buildings for Potential Seismic Hazards: A Handbook, Second Edition*,¹ as guidance for seismic screening of an inventory of buildings. It describes a technique for identifying the relatively more vulnerable buildings in a large inventory so that they can be addressed in more detail.

The FEMA 154 publication is nationally applicable and addresses all building types. In some cases, the screening will suggest specific seismic rehabilitation opportunities that do not require additional engineering and risk analyses.

The incorporation of seismic screening into ongoing facility assessment activities requires assigning the screening to the appropriate inspectors. If inspections are periodically carried out by the owner or operator in the hotel and motel buildings for other purposes, such as life safety, insurance, occupational health and safety, or hazardous materials identification, it may be possible to assign the seismic screening to the same inspectors with some additional training. Alternatively, the seismic screening can be assigned to a consulting architect or engineer.

B.2.2.5 Seismic Evaluation

Seismic evaluation is an engineering analysis of individual hotel or motel buildings. It usually follows the seismic screening, when the buildings identified as relatively more vulnerable are subjected to a more detailed

¹ To order this and other FEMA publications, you may write to FEMA, PO Box 2012, Jessup, MD 20794-2012; or you may call 800-480-2520, Monday – Friday, 8:00 a.m. – 5:00 p.m., eastern time; or you may fax your request to 301-362-5335.

Incremental Seismic Rehabilitation

Element 4 Seismic Screening

Initial Hotel and Motel Facility Manager/ Risk Manager Screening of Seismic Concerns

Incremental Seismic Rehabilitation

Element 5 Seismic Evaluation

Incremental Seismic Rehabilitation

*Element 6
Developing a Risk Reduction Policy*

analysis. However, in some cases, such as when the owner's or operator's building inventory is small, seismic evaluation of individual buildings may be the first step of the incremental seismic rehabilitation process.

Guidance for seismic evaluation of buildings is contained in standard ASCE 31,² *Seismic Evaluation of Existing Buildings*, which is based on FEMA 310, *Handbook for the Seismic Evaluation of Existing Buildings—A Prestandard*. The standard provides engineering guidance on how to evaluate categories of buildings in order to identify deficiencies and determine effective rehabilitation measures.

Seismic evaluation can be done by the owner's or operator's professional staff or by a consulting engineer.

B.2.2.6 Developing a Risk Reduction Policy

Convince the board of directors to adopt a clear policy statement supporting seismic risk reduction. Such a policy should, at a minimum, establish seismic performance objectives for the owner's and/or operator's hotel and motel buildings. Seismic performance objectives define the target performance of a building following an earthquake of a specified intensity. The policy and objectives should be developed and documented as part of the seismic rehabilitation planning process.

Owner and operator risk reduction policies are likely to differ. Owner seismic risk reduction is more likely to focus on reducing earthquake damage to the hotel building, while operator risk reduction is more likely to focus on liability for earthquake deaths and injuries to guests and staff. Both are likely to be concerned about business interruption, though their focuses may differ as a function of their management agreement. With such potential divergence of interest, it is important that owners and operators not only develop a risk reduction policy, but also that they communicate with each other and coordinate their policies.

This coordination is multi-faceted, because owners are likely to have agreements with different operators for different hotel buildings, and operators are likely to deal with multiple owners.

B.2.2.7 Seismic Rehabilitation Planning for Specific Buildings

FEMA has developed engineering guidance to plan seismic rehabilitation for specific buildings, including FEMA 356, *Prestandard and Commentary for the Seismic Rehabilitation of Buildings*, which includes specific techniques for analyzing and designing effective seismic rehabilitation. The planning task entails four specific facility planning **subtasks**:

- 1. Establish seismic target performance levels:** With cooperation between central management and local facility management, as well as between the owner and operator, establish the performance level desired in each of the owner's or operator's hotel and motel buildings following an earthquake. Performance levels used in FEMA 356 are, in declining level of protection:
 - Operational
 - Immediate Occupancy
 - Life Safety
 - Collapse Prevention

² ASCE 31 can be obtained from the American Society of Civil Engineers at 1-800-548-2723.

This is an expansion of the two performance levels—immediate occupancy and life safety—included in ASCE 31, *Seismic Evaluation of Existing Buildings*. The figures adapted from FEMA 356 on this and the following page demonstrate the use of these performance levels. Reasonable objectives and expectations should be considered for moderate, severe, and rare great earthquakes.

2. Prioritize rehabilitation

opportunities: Carry out additional engineering and risk analysis in order to prioritize the seismic rehabilitation opportunities identified in the seismic evaluation in terms of risk reduction. ASCE 31 and FEMA 356 include lists of seismic rehabilitation measures as a function of common building types. Priorities for these measures are established in terms of respective contribution to the overall earthquake resistance of the structure.

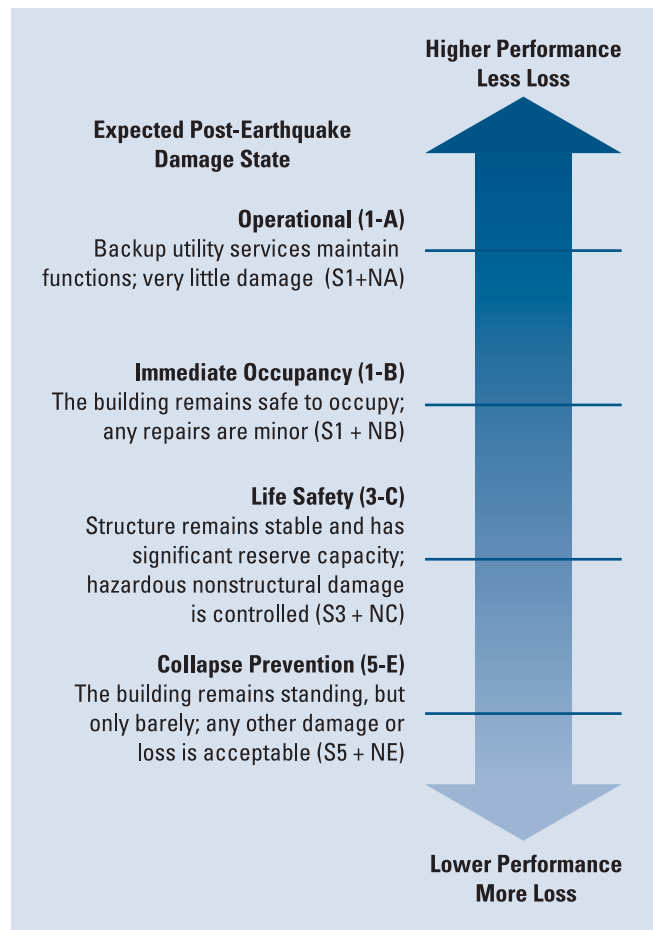
Apply a “worst first” approach. Attend to heavily used sections of the most vulnerable buildings housing the greatest number of occupants, as well as to areas housing critical functions and equipment. For example, higher priorities may be given to rehabilitation of areas of higher human occupancy, such as banquet rooms and restaurants; to areas that facilitate the evacuation of the building in an earthquake, such as lobbies, corridors, stairs, and exits; and to areas where important information and equipment are housed.

3. Define increments: Break down the specific seismic rehabilitation opportunities into discrete incremental rehabilitation measures that make sense in engineering and construction terms. When establishing increments, consider scheduling to minimize disruption to normal hospitality operations.

4. Integrate with other rehabilitation work: Link each incremental rehabilitation measure with other related facility maintenance or capital improvement work. The related work classifications may differ from one building owner or operator to another, and some may be the owner’s responsibility while other may be the operator’s, but they will fall into the following generic categories:

- Building envelope improvements
- Interior space reconfiguration
- Life safety and accessibility improvements
- Refinishing and hazardous materials removal
- Building systems additions, replacements, and repairs
- Additions to existing buildings

Target Building Performance Levels and Ranges



Adapted from FEMA 356, Figure C1-2

Damage Control and Building Performance Levels

Target Building Performance Levels				
Lower Performance More Loss		Higher Performance Less Loss		
Overall Damage	Collapse Prevention Level (5-E)	Life Safety Level (3-C)	Immediate Occupancy Level (1-B)	Operational Level (1-A)
Overall Damage	Severe	Moderate	Light	Very Light
General	Little residual stiffness and strength, but load-bearing columns and walls function. Large permanent drifts. Some exits blocked. Infills and unbraced parapets failed or at incipient failure. Building is near collapse.	Some residual strength and stiffness left in all stories. Gravity-load-bearing elements function. No out-of-plane failure of walls or tipping of parapets. Some permanent drift. Damage to partitions. Building may be beyond economical repair.	No permanent drift. Structure substantially retains original strength and stiffness. Minor cracking of facades, partitions, and ceilings as well as structural elements. Elevators can be restarted. Fire protection operable.	No permanent drift. Structure substantially retains original strength and stiffness. Minor cracking of facades, partitions, and ceilings as well as structural elements. All systems important to normal operations are functional.
Nonstructural Components	Extensive damage.	Falling hazards mitigated but many architectural, mechanical, and electrical systems are damaged.	Equipment and contents are generally secure, but may not be operable due to mechanical failure or lack of utilities.	Negligible damage occurs. Power and other utilities are available, possibly from standby sources.
Comparison with performance intended for buildings designed under the <i>NEHRP Provisions</i> for the Design Earthquake	Significantly more damage and greater risk.	Somewhat more damage and slightly higher risk.	Less damage and lower risk.	Much less damage and lower risk.

Adapted from FEMA 356, Table C1-2

Opportunities for project integration are listed in Part C, Section C.2 of this manual. Some examples of the opportunities you can use to link projects are: when accessing concealed areas, when removing finishes and exposing structural elements, when performing work in a common location, when sharing scaffolding and construction equipment, and when sharing contractors and work force.

The four subtasks described above form an iterative process. The definition and related cost estimation of increments, as well as the integration with other maintenance and capital improvement projects (subtasks 3 and 4), may lead to a revision of target performance levels (subtask 1) or to specific analysis carried out as part of subtask 2.

Incremental Seismic Rehabilitation

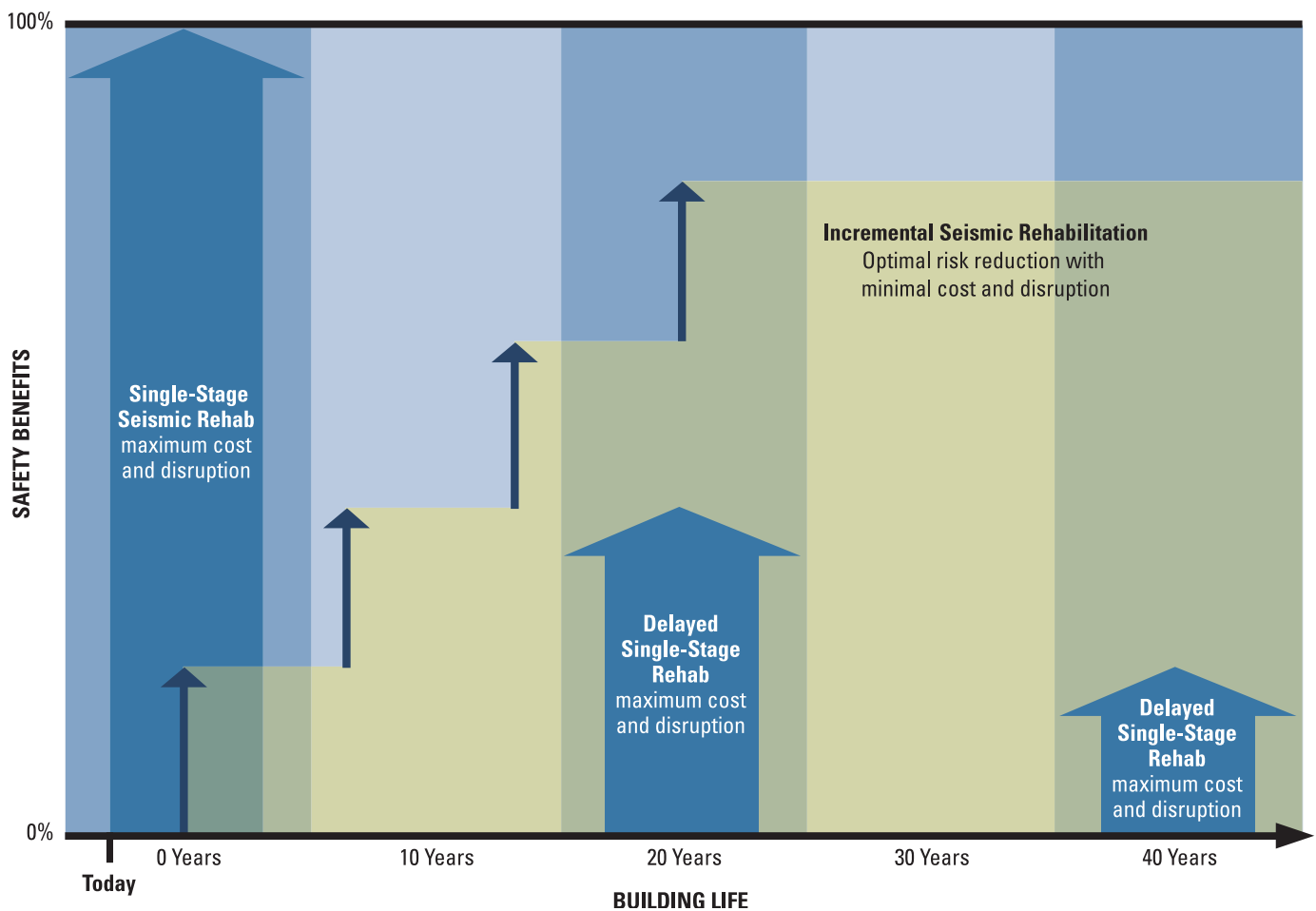
Element 8 Staging Seismic Rehabilitation Increments

B.2.2.8 Staging Seismic Rehabilitation Increments

Determine the number and scope of incremental stages that will be undertaken and the length of time over which the entire rehabilitation strategy will be implemented.

Estimates of seismic damage can be quantified in terms of percentage of building value damaged. Annual seismic damage is calculated as the probable damage that can result in any year from all possible earthquakes. The benefits of seismic rehabilitation are quantified as the reduction in annual seismic damage resulting from specific rehabilitation actions (also quantified in terms of percentage of building value). A generalized life-cycle benefit analysis shows that incremental approaches can return a substantial portion of the expected benefits of single-stage seismic rehabilitation carried out now.

The schematic diagram below illustrates such a life-cycle benefit analysis. The three wide arrows represent the benefits of single-stage rehabilitation occurring at three points in time: now, in 20 years, and in 40 years. Clearly, the largest benefit derives from a single-stage rehabilitation done now, and it is designated as 100%. The benefits of single-stage rehabilitation done in the future must be discounted and expressed as some percentage lower than 100%, as represented by the decreased arrows. The stepped portion of the diagram represents incremental rehabilitation starting soon and completed in four increments over 20 years. The benefits of the future increments must also be discounted, and the benefit of the completed incremental rehabilitation is therefore expressed as a percentage lower than 100%, but higher than the single-stage rehabilitation in year 20. Reducing the overall duration of the incremental rehabilitation will increase its benefit, and extending the duration will decrease it.



Incremental seismic rehabilitation affords great flexibility in the sequence and timing of actions when the following precautions are kept in mind:

- It is important to get started as soon as possible. Any early reduction of risk will provide benefit over the remaining life of the building. Delaying action extends risk exposure. The incremental approach can be more effective than a delayed, single-stage rehabilitation, as long as one gets started soon.
- Even if the completion of the incremental program takes 10 or 20 years, most of the risk reduction benefit is realized.
- There is a wide margin of error. For example, you may unintentionally increase the probability of damage in the first few years due to an initial rehabilitation increment that inadvertently makes the building more vulnerable to damage, and still realize the benefit of risk reduction if you complete the incremental rehabilitation over a reasonable period.

*Incremental Seismic
Rehabilitation*

*Element 9
Budget Packaging*

B.2.2.9 Budget Packaging

The facility, risk, and financial managers should carefully plan how to present the incremental seismic rehabilitation budgets to maximize the probability of their being approved, given the financial realities of owner and operator organizations. Hotel and motel capital improvement budgets are generally categorized into escrow and outside escrow accounts. Escrow accounts, usually consisting of 3.5–5.0% of revenues, are set aside for specific types of improvements that are under the control of the operator. Outside escrow accounts cover other improvements that are usually under the authority of the owner; in some cases they may be required by the operator or subject to the owner-operator agreement. Most incremental seismic rehabilitation improvements will be in the outside escrow category, while some, such as attachment and anchoring of light fixtures or mechanical equipment, may fall in the escrow category. The facility maintenance and capital improvement work with which the seismic rehabilitation increments are to be integrated may also be outside escrow or escrow improvements. Thus, integrated incremental seismic rehabilitation may present an opportunity for the creative packaging of escrow and outside escrow accounts into integrated budget packages.

The facility capital improvements and maintenance budget proposals, generated both locally at the building and centrally at owner or operator headquarters, are results of the facility planning process. The budget, however, is also a vehicle for establishing funding priorities through a board decision, a special agreement between the owner and operator, or other process. It is unlikely for most hotel and motel building owners and operators in the United States to be able to raise funds for a comprehensive seismic rehabilitation program of all their buildings. While the incremental rehabilitation approach appears to be a viable alternative, in some organizations it may be necessary to “package” incremental seismic rehabilitation with other work in order to get it funded.

In regions of moderate seismicity and low seismic awareness (parts of New York and New England, for example), it may be useful to concentrate on rehabilitation measures that also reduce the risk of loss due to other natural or man-made forces, such as high winds or terrorist attack. Such a multi-hazard approach will help justify mitigation investments.

For those parts of the country where the understanding of earthquake risk is limited, it may be necessary and appropriate to combine seismic rehabilitation costs with normal maintenance budgets.

B.2.2.10 Financial Packaging

Aside from escrow improvements that are funded directly from revenues, hotel and motel owners can fund outside escrow improvement from three sources: equity, commercial credit, and operator credit. The mode of financing should be decided prior to initiation of the seismic rehabilitation.

B.2.2.11 Seismic Rehabilitation Project Management

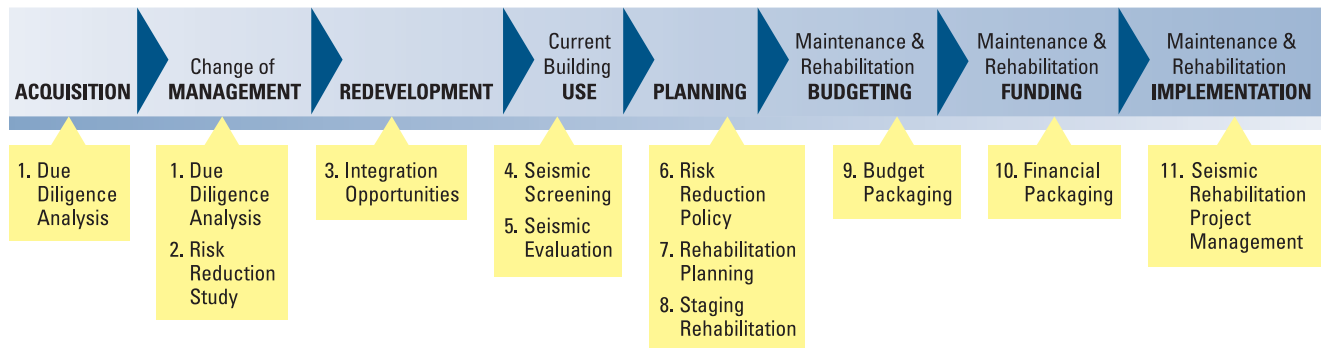
In addition to management coordination between the operator and owner, the implementation of the selected incremental seismic rehabilitation measures in combination with other building work may require detailed project design and bid packaging.

- Fully brief or train in-house architects/engineers or outside consultants preparing the bid documents on the rationale behind the rehabilitation measures in order to assure that the risk reduction objectives are achieved.
- Ensure the continuity of building documentation from the analysis and design through construction and as-built drawings.
- Conduct a pre-bid conference to explain to all prospective bidders the seismic risk reduction objectives and the rationale for their selection.

Federal and state mandates and programs represent opportunities for seismic rehabilitation. Federal and state programs may establish requirements affecting the implementation phase that have implications for hotels and motels (e.g., Americans with Disabilities Act [ADA] and Occupational Safety and Health Administration [OSHA] requirements).

B.2.3 Integration into the Hotel and Motel Facility Management Process

The following diagram illustrates the integration of the 11 elements discussed in the preceding sections (B.2.2.1 through B.2.2.11) into the hotel and motel facility management process. The elements are shown in the phase of the management process in which they are most likely to be implemented.



Incremental Seismic Rehabilitation

Element 10 Financial Packaging

Incremental Seismic Rehabilitation

Element 11 Seismic Rehabilitation Project Management

In Brief

Ten additional activities can be added to the facility management process to further reduce seismic risk.

B.3 Opportunities for Seismic Risk Reduction in Support of Integrating Incremental Seismic Rehabilitation into the Facility Management Process

The following ten opportunities for seismic risk reduction support the integration of an incremental seismic rehabilitation program:

1. Responding to Occupant Concerns
2. Emergency Management/Response Planning (establishing liaison)
3. Emergency Management/Mitigation Planning (establishing liaison)
4. Developing a Risk Reduction Policy
5. Incorporating Federal and State Mandates and Programs
6. Coordinating with Risk and Insurance Managers
7. Coordinating with Lenders
8. Becoming Familiar with Applicable Codes
9. Establishing and Maintaining a Roster of Design Professionals
10. Negotiating Code Enforcement

These opportunities are created by internal and external factors that typically influence the hotel and motel facility management process. Internal factors are generated within the owner's or operator's organization. External factors are imposed on organizations by outside pressures, such as the government, insurance regulations and practices, or the financial climate. The following factors may influence each respective phase:

Acquisition: external market conditions, lenders and insurers, and internal risk management

Change of Management: external market conditions and insurers, and internal risk management

Redevelopment: external market conditions, lenders and insurers, and internal marketing, architectural, and risk reduction policies

Current Use: external federal and state programs, and internal occupant concerns

Planning: external insurance carriers and brokers and government mandates, and internal board policies

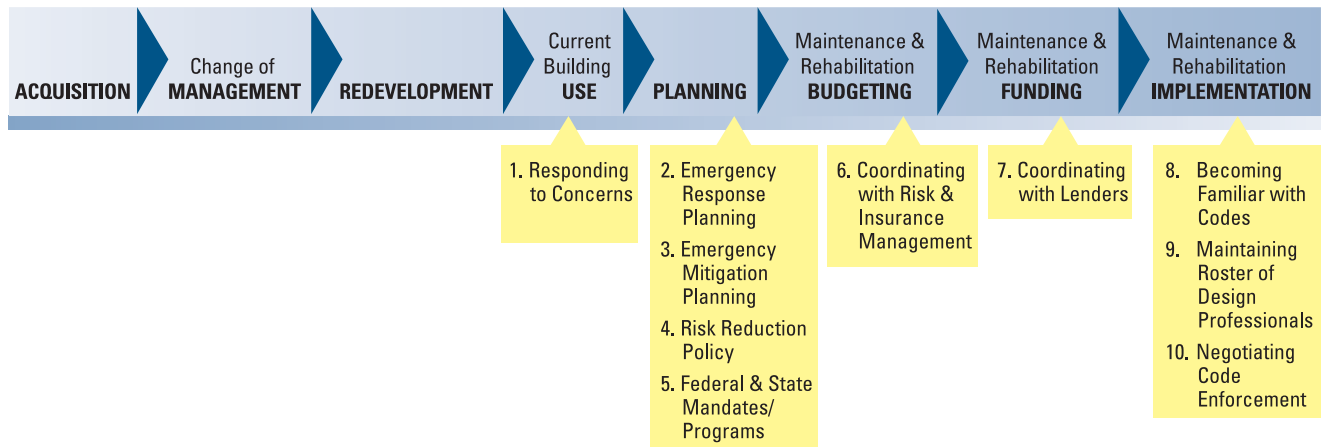
Budgeting: external government fiscal regulations and lender requirements, and internal budgetary constraints and risk management

Funding: external economic conditions

Implementation: external federal and state mandates and programs, codes and code enforcement

Appendix I to this manual, Additional Information on Hotel and Motel Building Facility Management, contains a discussion of the specific phases and the related internal and external influences for those seeking more information on the facility management process.

The following diagram illustrates the integration of these opportunities into the hotel and motel facility management process. The opportunities are shown in the phase of the management process in which they are most likely



to be implemented. Each opportunity is discussed in detail in the following sections (B.3.1 through B.3.10).

B.3.1 Responding to Occupant Concerns

Hotel and motel operators should track all guest and staff concerns that relate to earthquake vulnerability, and make sure they are understood and considered by both owners and operators in the **planning** phase.

Be alert to guest concerns, especially as they affect occupancy. They can be a source of considerable influence on risk managers as well as a potentially significant pressure on the facility management process. Occupant concerns may become the vehicle for channeling owner and operator internal pressures of all kinds, including policies adopted by the board, into capital improvements and maintenance actions.

B.3.2 Emergency Management/Response Planning

Hotel and motel operators should establish a liaison with emergency management agencies and volunteer agencies such as the Red Cross.

Become familiar with the role of hotels and motels in the local emergency response plans. If it is a significant role, become active in the emergency planning process. Define the role in specific detail, assigning specific functions to specific facilities. The role of specific hotel and motel buildings in the local emergency response plans (such as shelter and housing for disaster victims) should affect seismic performance objectives and the priority of specific seismic rehabilitation measures. Therefore, there should be full coordination between an operator's emergency planning and facility planning functions.

B.3.3 Emergency Management/Mitigation Planning

Hotel and motel owners and operators should establish a liaison with emergency management mitigation planners at the state and local levels.

Endeavor to incorporate the hotel and motel building earthquake mitigation into the state's mitigation plan, and to recognize the owner's and operator's incremental seismic rehabilitation measures as elements of the mitigation plan.

Federal resources and funds are available to small business owners following a presidentially declared disaster for the support of disaster recovery and mitigation planning activities in the form of Small Business Administration

Currently there are no seismic rehabilitation mandates or implications in any federal or state programs related to existing commercial buildings with the exception of California.

(SBA) loans. Hotel and motel owners who qualify should make every effort to obtain these resources.

B.3.4 Developing a Risk Reduction Policy

Convince the board of directors to adopt a clear policy statement supporting seismic risk reduction. Such a policy should, at a minimum, establish seismic performance objectives for the owner's and operator's hotel and motel buildings. Seismic performance objectives define the target performance of a building following an earthquake of a specified intensity. The policy and objectives should be developed and documented as part of the seismic rehabilitation planning process.

B.3.5 Incorporating Federal and State Mandates and Programs

Hotel and motel owners and operators should become familiar with the seismic rehabilitation requirements imposed on hotel and motel buildings by federal and state programs, currently or under discussion for the future, and take them into account in planning activities.

B.3.6 Coordinating with Risk and Insurance Managers

Establish coordination between the facility management and risk management functions within the respective hotel and motel building owner's and operator's organizations, as well as between these organizations.

The owner's or operator's risk and insurance managers may have a direct or indirect role in the planning and budgeting phases of the facility management process with regard to decisions related to insurance as well as other budget categories.

In regions of seismic risk, the risk of building loss or damage, the risk of occupant death or injury, and the risk of the owner's and operator's liability must all be assessed. The risk managers should be fully informed on the individual building or project approaches to seismic risk reduction and should participate in the planning process. Insurance carriers are more than willing, when asked, to provide building owners and operators with Loss Control and Prevention Reports that include recommendations for loss prevention. If seismic risk is covered by the owner's or operator's insurance carrier, it may be possible to negotiate a rate reduction, deductible reduction, or increased maximum benefit. On the other hand, the insurer may require some seismic rehabilitation as a condition of coverage.

Hotel and motel facility operators have practiced formal risk management for a long time, but it usually focuses on issues of loss reduction from injury, theft, and other crimes. Facility losses are of relatively recent concern to many hotel and motel building owners and operators. For large owners or operators with nationwide portfolios, risk management is usually placed at central headquarters. Facility management is a local function that takes place at a particular building, or regionally, for a group of buildings. In this case, there is a need to establish effective communication lines between central organization staff and local facility managers. Risk managers may develop checklists, questionnaires, or other planning tools to be used by facility managers in planning for seismic risk reduction.

B.3.7 Coordinating with Lenders

Hotel and motel owners should become familiar with the requirements likely to be imposed by lenders on their capital improvement program. Some lenders may waive or reduce their requirement for seismic insurance if certain seismic improvements are included in the program.

B.3.8 Becoming Familiar with Applicable Codes

Both owners and operators should become familiar with the seismic rehabilitation requirements imposed in their building inventory's jurisdictions by building codes or other codes and ordinances, currently or under discussion for the future such as rehabilitation codes, and take them into account in planning activities.

B.3.9 Establishing and Maintaining a Roster of Design Professionals

Both owners and operators should develop and maintain a roster of architects, engineers, and other consultants with expertise in the fields of seismic assessment of buildings, seismic design, and risk analysis to quickly make use of their specialized expertise when needed. Such qualified professionals can be identified with the assistance of professional societies, such as the American Society of Civil Engineers, the American Institute of Architects, or the Earthquake Engineering Research Institute.

B.3.10 Negotiating Code Enforcement

Discuss the owner's or operator's planned incremental seismic rehabilitation actions with the applicable code enforcement authorities.

Building codes impose requirements on the implementation phase in cases of repair, alteration, or addition to existing buildings. These requirements may be enforced by a state or local agency. Such requirements can add costs to a project and jeopardize feasibility if not taken into account.

Although additions must comply with building code seismic requirements, few codes mandate seismic rehabilitation in repair and alteration projects. Incremental seismic rehabilitation is consistent with most building code requirements applicable to existing buildings.

If applicable, negotiate with code enforcement authorities an optimization of life safety and risk reduction when undertaking seismic rehabilitation. Some code enforcement agencies negotiate required life safety and other improvements with owners of existing buildings who undertake voluntary building rehabilitation. Such negotiations attempt to strike a compromise between safety, feasibility, and affordability.

B.4 Additional Components of a Comprehensive Earthquake Safety Program

In addition to integrating an incremental seismic rehabilitation program into the hotel and motel facility management process and integrating opportunities to support and implement such a program, there are additional activities that can become part of a comprehensive earthquake safety program for hotel and motel buildings. These activities can be implemented by the operator at any time.

B.4.1 Building Contents Mitigation

Communicate with maintenance staff to initiate housekeeping or maintenance measures to reduce or eliminate risks from earthquake damage to equipment, furnishings, and unsecured objects in buildings. Work may include such tasks as:

- Fastening desktop equipment

In Brief

Two additional components of an earthquake safety program can be initiated.

- Anchoring display cases, bookcases, file cabinets, storage shelves, and other large furnishings
- Restraining objects on shelves
- Securing the storage of hazardous materials such as chemicals

FEMA has developed materials that contain information on contents mitigation. These include FEMA 74, *Reducing the Risk of Nonstructural Earthquake Damage: A Practical Guide*, and FEMA 241, *Identification and Reduction of Nonstructural Earthquake Hazards in Schools*. (While the latter primarily addresses schools, it is equally applicable to other facility types.)

B.4.2 Earthquake Drills

Introduce earthquake drills and appropriate earthquake preparedness materials into the regular hotel and motel building emergency preparedness program. Knowing what to do and where to go in an emergency can be critical to life safety in earthquakes.

B.5 Preparing a Plan for the CEO and the Board

This section provides guidance to hotel and motel facility managers, risk managers, and financial managers when preparing a proposal for a seismic safety program in response to top management's request.

The owner's or operator's facility, risk, and financial managers should prepare a proposal for a seismic risk reduction program. This proposal should be based on an analysis of each of the elements of an incremental seismic rehabilitation program (B.2.2), opportunities for seismic risk reduction (B.3), and additional components (B.4) as discussed above. The proposal should include the following elements:

- A discussion of each recommendation in Part B from the perspective of the owner's or operator's current facility management, risk management, and financial management practices. This may take the form of a comprehensive rewriting of Part B.
- A specific plan and recommendation for initiating the first two steps following building acquisition, change of management, and redevelopment, **Seismic Screening** and **Seismic Evaluation**. The plan should include a budget and schedule of activities.
- A request for the budget for these first steps.

If the necessary resources are available to the facility manager, perform a rapid visual screening, as outlined in B.2.2.4, prior to preparing the program proposal. Then, expand the proposal based on the known inventory of potentially vulnerable buildings as determined in the screening process.

If the owner or operator has a current 5-year capital improvement plan or its equivalent, add the following details to the proposal discussed above:

- Identify existing buildings currently included for rehabilitation in the current 5-year plan.
- Perform a preliminary review of their seismic vulnerabilities, as outlined in B.2.2.4.
- Using Part C of this manual, identify potential seismic rehabilitation increments that could be integrated with the rehabilitation program.

In Brief

There are three options to propose a seismic safety program.

- Add a FEMA 356, *Prestandard and Commentary for the Seismic Rehabilitation of Buildings*, seismic rehabilitation design task to the rehabilitation projects.

Summary of Part B

- Planning for earthquake risk reduction in hotel and motel buildings requires a coordinated and integrated effort by facility managers, risk managers, and financial managers of both the owner and operator organizations.
- Eleven specific activities can be added to the current facility management process to implement an incremental seismic rehabilitation program.
 1. Due Diligence Analysis
 2. Operator Risk Reduction Standards
 3. Initial Integration Opportunities
 4. Seismic Screening
 5. Seismic Evaluation
 6. Developing a Risk Reduction Policy
 7. Seismic Rehabilitation Planning for Specific Buildings
 8. Staging Seismic Rehabilitation Increments
 9. Budget Packaging
 10. Financial Packaging
 11. Seismic Rehabilitation Project Management
- Ten additional activities can be added to the facility management process to further reduce seismic risk.
- Two additional components of an earthquake safety program can be initiated.
- There are three options to propose a seismic safety program.

Recommended Actions

1. Prepare an analysis of your buildings using Part B of this manual as a guide.
2. Based on this analysis, prepare a seismic risk reduction plan for top management that includes the costs and benefits of such a plan.
3. Adopt a comprehensive earthquake safety program and begin to implement incremental seismic rehabilitation in your buildings.

