2.1 What is the purpose of this chapter? This chapter describes how the U.S. Fish and Wildlife Service (Service) uses portfolio-based strategies to manage our overall investments in constructed real property to accomplish our mission with minimal risks, lowest life-cycle costs, and greatest benefits.

2.2 What are the objectives of this chapter? By following the principles in this chapter, we will:

A. Manage each asset based on how well it supports our mission;

B. Direct resources where they are needed most;

C. Integrate considerations related to constructed real property assets into overall plans for program delivery with emphasis on mission impact and the ability to sustain investments over time;

D. Effectively manage the life cycle of each asset by systematically considering realistic short-term and long-term costs of individual assets and the entire portfolio in decisions to construct, repair, or replace assets;

E. Focus planning on the long-term overall condition of our portfolio of assets and give priority to those most important to our mission; and

F. Identify opportunities to dispose of assets that no longer support our mission.

2.3 What is the scope of this chapter? This chapter applies to all investments in constructed real property assets, but is most important for larger projects, such as those normally funded from Deferred Maintenance (DM), construction, or transportation budgets.

2.4 What are the authorities and terms you need to know to understand this chapter? See 372 FW 1 for the authorities and definitions of terms for all the chapters in Part 372.

2.5 Who is responsible for mission-centric life-cycle management of our constructed real property portfolio? See 372 FW 1, Table 1-3 for the overall responsibilities of Service management for constructed real property. Table 2-1 below is specific to the content of this chapter.

Table 2-1: Responsibilities for Mission-Centric Life-Cycle Management

These employees…	Are responsible for…
A. The Chief – National Wildlife Refuge System	Leading the national level development and implementation of policies and practices for this chapter.
B. Directorate Members	Applying the principles in this chapter to maximize the contribution of constructed real property assets to the mission in the most cost-effective manner possible.

Table 2-1: Responsibilities for Mission-Centric Life-Cycle Management	
These employees…	**Are responsible for…**
C. Assistant Regional Directors	**(1)** Ensuring that for all facilities within their area of responsibility: **(a)** A current and accurate Asset Priority Index (API) score is in place for each asset in the Service Asset and Maintenance Management System (SAMMS); **(b)** Reliable life-cycle costing information is applied to assets, especially for large projects like those funded from DM, construction, and transportation budgets; and **(c)** Life-cycle investments, especially for large, complex constructed real property assets, receive appropriate priority in workforce and budget planning so that we are managing the assets in a way that maximizes our return on investment; **(2)** Focusing asset management on mission delivery, integrating it with overall program responsibilities, optimizing life-cycle return on investments, and ensuring long-term sustainability of operations; and **(3)** Managing the portfolio of constructed real property in the Region to ensure that all funds for operation, maintenance, or construction of constructed real property are prioritized and expended in a way that efficiently and cost-effectively supports the mission.
D. Regional Facilities Program Supervisors	Helping Regional program leadership and Field Station Managers to: **(1)** Determine API scores and record them in SAMMS and the Financial and Business Management System (FBMS), **(2)** Collect data and calculate what's needed to determine project priorities, and **(3)** Understand life-cycle costs of all assets within the programs. This includes understanding an asset's contribution to mission outcomes, which gives them the foundation they need to make the best decisions related to construction, repair, or disposal of assets.
E. Field Station Managers	**(1)** Knowing and being able to articulate how critical to the mission assets are;

Table 2-1: Responsibilities for Mission-Centric Life-Cycle Management	
These employees…	**Are responsible for…**
	(2) Knowing the current condition of assets; **(3)** Understanding full life-cycle costs of all existing or proposed new assets within their area of responsibility, relating those costs to mission outcomes, and developing recommendations for their construction, repair, or disposal; and **(4)** Accurately accounting in FBMS for the cost of all annual constructed real property operation and maintenance (including all types of maintenance, wages, utilities, energy costs, etc.), component renewal, DM, and capital improvements so that they and their Regional colleagues can manage life-cycle costs.

2.6 How does the Service document the importance of facilities to accomplishing its mission?

A. With the help of the Regional Facilities Program Supervisors, Field Station Managers assign an API score in SAMMS to each asset. They base the score on how critical each asset is to the mission (i.e., "mission criticality") (80% weight) and whether there is an alternate asset available that can meet the same need (i.e., "substitutability") (20% weight). The API score is a useful tool when considering investments in individual assets, groupings of assets, or our entire nationwide facility portfolio, because it gives managers an understanding of each asset's relative contribution to supporting our mission.

B. We want to maintain assets with high API scores that are in good condition, while assets with low API scores should receive less attention. Managers should consider for disposal those assets with very low API scores.

C. When considering the acquisition of new assets, managers should focus on adding those with a high API value, as we do not want to devote limited financial resources to low priority assets.

2.7 How does the Service group API scores for comparison purposes? We group API scores into the following three categories:

A. Mission-critical: Assets with the highest API scores are mission-critical. Without them, the mission would be compromised.

B. Mission-dependent, not critical: Assets with mid-range API scores are mission-dependent, not critical. They are important to the mission, but have substitutes.

C. Not mission-dependent: Assets with low API scores are not mission-dependent, which

means that the mission would not be noticeably impacted by their loss.

2.8 How does the Service use API scores in conjunction with Facility Condition Indexes (FCI) to influence management decisions? We use API and FCI scores to guide investments, including construction, maintenance, component renewal, replacement, and demolition. To achieve an optimal return on investment, we invest first and most often in assets that contribute most to the mission and have the lowest deficiency costs. We invest minimally in assets that contribute the least to our mission and have the highest deficiency costs.

2.9 What is life-cycle management?

A. Life-cycle management is the systematic process of strategic and cost-effective planning, constructing, operating, maintaining, renewing, upgrading, replacing, or disposing of real property assets. Knowing the costs and timing of all life-cycle components with a reasonable degree of accuracy is essential to making good business decisions as to where and when to devote financial resources.

B. When prioritizing asset investments, we must develop a clear business case based on comparing full life-cycle costs (i.e., an investment strategy) and the asset's contribution to the mission using the API and FCI scores, the scope of benefits gained by dedicating funds to the asset, and determining the consequences of failure to act. We must make the same considerations when establishing the scope of work for each project. This includes establishing a rationale for mission needs and affordability so we make the most prudent decisions on size, location, functionality, sustainability, and complexity of major repairs or component renewals and construction of new or replacement facilities.

C. Although life-cycle management is especially important for projects funded from DM, transportation, and construction appropriations, we must apply it to all asset management decisions, regardless of the source of the funds.

2.10 What is the best way to manage total life-cycle costs? Managers can best use the total life-cycle cost information of constructed real property assets through thoughtful consideration and planning of mission needs and maintenance and operational capacity. The following practices should significantly enhance our ability to minimize cost while achieving mission needs:

A. Apply value engineering principles, starting with the pre-planning phases, to ensure we are constructing our assets in a manner that gives us the highest return on investment. This includes:

(1) Ensuring a positive rate of return on investments in renewable energy,

(2) Using standard designs to the fullest extent practicable,

(3) Building to the minimum needs of the Government,

(4) Ensuring that adequate local resources are available to maintain installed equipment, and

(5) Ensuring that construction techniques and materials are appropriate and adequate for the locality. Constructing assets that local resources cannot readily maintain results in a shortened functional life, unacceptable periods of inoperability or limited operational capacity, as well as significant increases in repair costs.

B. Fully evaluate current minimum mission needs, as well as the potential for any planned expansion requirement, and construct the asset to meet the minimum needs. Also consider affordable enhancements or additions to the asset during the planning and design phase to ensure the capacity to expand the asset's functionality in the future. Constructing to minimum needs while planning for expansion results in a lower initial investment cost, lower operational and maintenance costs, and decreased loss of operational time for future expansions.

C. Review the operation, repair, and maintenance requirements and costs of the proposed asset construction, rehabilitation, or demolition. Also review the field station's financial and workforce capacity to maintain and operate the asset in a manner that does not result in premature failure, excessive costs for maintenance, or unmanageable DM backlogs, all of which inflate the overall cost of ownership.

2.11 How do managers know if they are properly applying life-cycle management? We are properly applying life-cycle management when we can answer all of the questions in Table 2-2 with "Yes."

Table 2-2: Questions to Ask to Determine if You're Applying Life-Cycle Management

- Can we measure the contribution of each asset and project to our mission?
- Are our facilities strategically aligned with program goals and objectives in approved management plans?
- Do we make decisions about individual assets in the context of our overall portfolio?
- Can we measure each facility management activity's contribution to the life-cycle costs of the asset and our overall portfolio?
- Do our investments ensure the best return on investment?
- Can we afford to maintain the assets and keep them in acceptable operating condition in the long run?
- Can we maintain the asset with the skills and expertise available in the local area, including Service employees and the nearby contract workforce, in a cost-effective manner?
- Have adjustments to Regional workforce plans been made to ensure adequate maintenance, visitor services, and educational capacity to operate and maintain the asset in an appropriate manner?
- Can we realign assets and our workforce in response to change?
- Can we determine the future use, needs, and replacement of assets?

2.12 What are some examples of integrating life-cycle facility management into overall plans for mission delivery? Nearly every management activity we undertake has a connection to constructed real property, so we must include facility management in all plans for mission delivery. Our goal is to appropriately size, design, locate, and maintain assets so that they can sustainably meet mission needs. Following are two examples of what a manager must consider when he/she uses portfolio-based management, an understanding of life-cycle implications, meeting legal requirements, and appropriate workforce and budget planning to align our assets to accomplish our mission:

A. Office building: Primary considerations for constructing, leasing, or replacing an office building:

(1) Determine the functions of the building. Is it purely office space, are visitor contact and public use spaces necessary, how much storage space is needed, etc.?

(2) Explore opportunities to co-locate with other Service programs, partners, and Federal agencies.

(3) Compare the long-term cost and mission impact of lease versus ownership.

(4) Evaluate location options in terms of suitability for construction and long-term operation, maintainability, and mission delivery impacts.

(5) Ensure large projects, such as visitor centers, offices, or large shops include funding and a workforce sufficient to adequately operate and maintain the asset, including proactive component replacements and renewals.

(6) Ensure there are adequate water rights to support the facility without negatively impacting wildlife or habitat.

(7) Develop concepts for a building large enough (but not too large) to meet realistic projected needs over the life of the building. Office space must follow the Governmentwide standard, currently 180 usable square feet per person. Focus on constructing or leasing space that most efficiently meets the minimum needs over the life of the building at the lowest total cost to the Government, while ensuring mission accomplishment.

(8) Prioritize the building within the overall portfolio of other facility needs before proceeding with detailed planning and design.

(9) Make all of the considerations above within the context of meeting legal requirements for a building and seeking cost-effective energy conservation and renewable energy measures.

B. A levee: Primary considerations for a new levee or repair of an existing levee:

(1) Quantify the scope of the levee’s benefit to wildlife and habitat strategic goals in approved management plans, and the negative consequences of failure to act, including potential property damage and impacts on public safety.

(2) Determine overall water rights impacts by creation or modification of the levee.

(3) Determine the levee's functionality in terms of soil composition, dynamics of water fluctuations, reliable control of water levels, and impacts to surrounding areas.

(4) Assess vulnerability to risks, such as susceptibility to flooding or storm impacts and salt water intrusion. Integrate design features to make the levee flood- or storm-resilient and to promote natural values served by floodplains.

(5) Assess the risk of unintended negative impacts on non-target fish and wildlife.

(6) Assess your long-range ability to mitigate risks.

(7) Develop concepts for location, design, and size of the levee that best meet conservation objectives in a cost-effective and sustainable way over the life of the levee.

(8) Prioritize the levee within the overall portfolio of other facility needs before proceeding with detailed planning and design.

2.13 What other guidance is available on the detailed procedures of mission-centric life-cycle management of facilities?

A. This is a complex program with many recordkeeping, reporting, and budgeting components. We provide detailed guidance in the *Constructed Real Property Management Handbook*.

B. There are technical bulletins and user guides that describe administrative procedures for managing real property data and work orders in FBMS and SAMMS.

C. The Building Life Cycle Cost (BLCC) program developed by the National Institute of Standards and Technology provides computational support for the analysis of capital investments in buildings. It also provides information on conducting economic analyses by evaluating the relative cost-effectiveness of alternative buildings and building-related systems or components (e.g., energy and water conservation and renewable energy projects).

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