Department of the Interior

Policy on Deferred Maintenance, Current Replacement Value and Facility Condition Index in Life-Cycle Cost Management

I. Purpose

The purpose of this Policy is to supplement the direction provided in the Department of the Interior (DOI) Site-Specific Asset Business Plan (ABP) Guidance[1] by providing guidance to standardize the methodology used in measuring the condition of DOI's asset portfolio reported in the Federal Real Property Profile (FRPP)[2]. This Policy also supports previous guidance and tools issued to implement the DOI Asset Management Plan (AMP) and Executive Order 13327 (EO) on Federal Real Property Asset Management. (See Appendix 1 of the list of Departmental asset management guidance and tools)

Using Facility Condition Index (FCI), an accepted industry metric for determining the relative condition of constructed assets at a specific point in time, and the other performance metrics such as the Asset Priority Index (API), the Facility Utilization Index (FUI), and Operations and Maintenance (O&M) costs help asset managers make informed investment decisions that drive budget prioritization and the distribution of resources. This Policy is focused on standardizing the basic elements used to assess the condition of constructed asset investments and for estimating the current replacement value (CRV) on an asset and completing deferred maintenance (DM) work that was not performed when it should have been or when it was scheduled. DM divided by CRV provides the FCI. In no instance is FCI less than zero or greater than 1.0.

In calculating FCI, only those asset components and substructures that directly contribute to the integrity and the functionality of the constructed asset as planned and designed are to be factored into FCI. The inclusion of asset components, such as exhibits, landscapes, appliances, other types of personal property, among others, in calculating the CRV and DM costs for buildings and structures skews the FCI of constructed assets so that it may not reflect their true condition. Furthermore, cultural and maintained landscapes, and maintained archeological sites are not reported into the FRPP and do not use FCI to measure condition of these assets. The intent of the EO was to capture information in the FRPP on constructed assets and lands improved as result of constructed assets.

Though exhibits and appliances are not to be factored in determining the FCI for constructed assets, they are to be tracked separately to monitor their condition. To help ensure DOI managers in the field calculate and apply FCI properly and consistently, Appendix 2 provides supplemental guidance on identifying the types of assets and component parts that are to be considered when calculating the FCI for a constructed asset.

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[1] An ABP provides facility and regional managers with a micro-level view of a site's assets. The ABP projects a 5 to 10-year snapshot of the assets using the performance metrics of the Asset Priority Index (API), the Facility Condition Index (FCI), Facility Utilization Index (FUI), and Operations and Maintenance (O&M) costs to help make informed investment decisions that drive budget distribution.

[2] The General Services Administration defines the FRPP as the "single, comprehensive, and descriptive database of all real property under the custody and control of all executive branch agencies, except when otherwise required for reasons of national security," in accordance with Executive Order 13327.

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Only constructed assets that clearly meet the definition of one of the FRPP predominant use categories and for which CRV and DM estimates result in an accurate and valid assessment of an asset's condition will be reported to FRPP. Historic landscapes, cultural landscapes, and maintained archeological sites, for example, do not meet these requirements and will not be reported to FRPP.

The Policy identifies common, industry standard-based methodologies for calculating both CRV and DM for:

- Non-heritage buildings;
- Non-heritage structures[3];
- Heritage buildings and structures[4];
- Road assets; and
- Dams, water distribution systems, and power assets.

All bureaus are required to use these methodologies to estimate CRV and DM. Industry standard estimating practice and unit cost data will be used in conjunction with vendor quotes for materials not included in industry standard unit cost data as defined by this policy.

This Policy will:

- Provide for a consistent methodology in estimating CRV and DM costs across the Department;
- Enable comparison of asset condition (FCI) across the entire DOI portfolio;
- Support the process used to allocate funds to improve asset condition; and
- Provide consistency in reporting deferred maintenance in the financial statement and Condition Index value and the Value of assets to the FRPP.

A glossary of terms used in this Policy is provided in Appendix 3.

II. Structure of this Policy

This Policy is comprised of the following components:

I. Purpose
II. Structure of the Policy
III. Defining Deferred Maintenance
IV. Defining the Current Replacement Value
V. Calculating CRV and DM
VI. Asset Condition
VII. Systems Support
VIII. Appendices

[3] Does not include road assets, and dams, water distribution systems, and power assets.
[4] Does not include road assets, and dams, water distribution systems, and power assets.

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III. Defining Deferred Maintenance

Deferred maintenance (DM), which is used with CRV to calculate the FCI of an asset, is maintenance that was not performed when it should have been or when it was scheduled and which, therefore, was put off or delayed for a future period.[5] The DM estimates used to calculate FCI should not be used for program formulation. Estimates for actual project work must incorporate a higher level of detail and accuracy than the DM and CRV estimates used to calculate FCI provide. Estimates for actual project cost should achieve a Class A or Class B estimate prior to inclusion of the project in a budget request.

If maintenance deficiencies are observed by skilled professionals in the course of condition assessments, and in their judgment the deficiencies or needs have existed for some time, the repairs are deferred maintenance. An example of this might be a roof that needs repairs due to missing shingles. Evidence such as deteriorated roof sheathing or water damage to structural members provides justification for classification of the work as deferred maintenance. (See Appendix 2 for supplemental guidance on identifying the types of assets that must report data to FRPP and the component parts that are to be considered when calculating the FCI for those constructed assets.)

Similar situations arise for Heritage Assets. For instance, the roof of a Civilian Conservation Corps (CCC) era cabin may need replacement. The need for a new roof and the associated damage observed classify this as deferred maintenance. However, in this case, the replacement materials needed would have to be historically accurate materials applied using historically accurate construction methods (Figure 1).

Figure 1. A heritage asset will require historically accurate materials for repair and maintenance in order to maintain the intrinsic value of the asset.

Determining the deferred maintenance for the Adams House in Utah, for example, which is being restored as a visitor center for tourists, will require consideration of maintaining historic

[5] Statement of Federal Financial Accounting Standards (SSFAS No. 6) definition.

integrity at the detail level while accommodating potentially heavy visitor traffic and incorporating safety considerations.

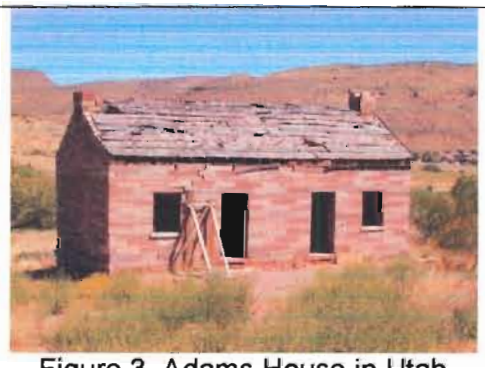

Figure 3 Adams House in Utah
(BLM heritage asset)

Most assets will have deferred maintenance determined as a result of scheduled work not being completed as planned. For instance, if a generator was due to have bearings replaced on a three-year schedule and a work order with a target start date was created in the facility maintenance management system, but the work was not completed as planned due to funding, or other constraints, the work should be considered deferred. In some cases, measurements of technical specifications such as remaining material thickness or variance exceeding allowed tolerances can be considered justification for classification of the work as deferred maintenance. (See Appendix 4 for a general description of condition assessments performed in the Department of the Interior).

DM is maintenance work that is deferred to a future budget cycle, or postponed, until funds become available. The failure to perform needed inspections, lubrication, repair, maintenance, and renewal through normal maintenance practice results in deferred maintenance. The under-budgeting of regular maintenance accumulates into a number of familiar needs: roof repairs, masonry repointing, and faulty heating, ventilation, and air conditioning (HVAC)[6] and control systems. These are familiar examples that accumulate into problems requiring major funding to correct.

The DOI standard work types include facility maintenance with subdivisions for corrective, recurring, component renewal, demolition, rehabilitation, and replacement. If the work is not done while the work order is classified as facility maintenance, it may become deferred maintenance based on the passage of the target start date, or on the recommendation of qualified condition assessment personnel. The categories of maintenance are as follows:

[6] HVAC systems control the ambient environment (temperature, humidity, air flow, and air filtering) and must be planned for and operated along with other data center components such as computing hardware, cabling, data storage, fire protection, physical security systems and power.

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Work Type Code	Type of Maintenance	Definition
DMCM	Corrective Maintenance	Work to restore a damaged, broken, or worn-out asset, asset component, or item of equipment to normal operating condition.
DMRM	Recurring Maintenance	Planned preventive maintenance activity that recurs on a periodic and scheduled cycle of greater than 1 year, but less than 10 years that was not completed as scheduled.
DMCR	Component Renewal	Planned preventive maintenance activity that recurs on a periodic and scheduled cycle greater than 10 years that was not completed as scheduled.
DMDE	Demolition	Dismantling and removal, or the surplus of a deteriorated or otherwise unneeded asset or item of equipment, including necessary clean-up work.
DMRH	Rehabilitation	Renovation of an existing asset or any of its components in order to restore and/or extend the life of the asset. Because there is no expansion or change of function the work primarily addresses deferred maintenance.
DMRP	Replacement	Substitution or exchange of one existing asset, asset component, or item of fixed, in-place equipment for another having the capacity to perform the same function.

IV. Defining Current Replacement Value

Estimates for the CRV of assets, including those calculated for heritage assets, are used to calculate the FCI, which is an indicator of the asset's condition and serves as a performance measure for condition improvement. In addition, CRV is reported to FRPP as the value of the asset.

The CRV estimates should not be used for any other purpose than to calculate FCI and reporting data to FRPP (i.e., not for program or budget formulation, project level cost estimates, appraisal value, reproduction value, acquisition costs for capitalization and depreciation, etc.).[7] Estimates for the actual replacement of individual facilities and projects must incorporate a higher level of detail and accuracy than the CRV estimates used to calculate FCI provide. Estimates for actual replacement cost or project cost should achieve a Class A or Class B estimate prior to the inclusion of a project in a budget request. Though in most instances there

[7] As noted in the Federal Real Property Council Real Property Inventory - User Guidance for FY 2007 Reporting, Plant Replacement Value (PRV). which is the same as CRV is used for reporting the "value" of an asset in the Federal Real Property Profile and is defined as the cost of replacing the existing constructed asset at today's standards,

should be a relationship between the CRV of an asset and the cost identified to replace an asset in a maintenance budgeting and planning system

CRV is defined as the standard industry cost and engineering estimate of materials, supplies, and labor required to replace a facility or item of equipment at its existing size and functional capability, and to meet applicable regulatory codes. When estimating CRV and DM, it should be assumed that code compliant materials and systems will be used to replace the existing asset. CRV is to be estimated for reconstructing an asset as it currently exits, without modifications or improvements. (See Appendix 2 for supplemental guidance on identifying the types of assets that must report data to FRPP and the component parts that are to be considered when calculating the FCI for these constructed assets.)

A. CRV for Non-Heritage Assets

CRV for non-heritage assets includes all the costs necessary to reconstruct an asset as it currently exists, without modification or improvements. The cost of planning/design, and project management must be included in the CRV. Special study costs, such as geotechnical, hydraulic, and hydrologic, permits, and applicable taxes and special assessments should also be included in the value. Indirect costs, which include salaries and benefits for government employees, are covered by annual appropriations and will not be included in CRV estimates.

The CRV should only be used as the denominator in the FCI for estimating the condition index of the asset. The CRV for condition assessment purposes is a Class "C" estimate[8]. In the case of a building, a Class "C" estimate is an approximation of the construction cost based on the cost per square foot of a similar constructed building.

In the event that an asset is to be replaced, a more detailed cost estimate to support the maintenance budgeting and planning system, including cost estimates to support the contracting/ bidding process must be completed. This estimate should include a detailed time and materials estimate to replace the asset and should be of sufficient detail to insure that appropriate funding is available for completion of the project.

B. CRV for Heritage Assets and Multi-Use Assets[9]

Only constructed assets that clearly meet the definition of one of the FRPP predominant use categories and for which CRV and DM estimates result in an accurate and valid assessment of an asset's condition will be reported to FRPP. Historic landscapes, cultural landscapes, and maintained archeological sites, for example, do not meet these requirements and will not be reported to FRPP. Calculating CRV estimates for them and like assets is not required.

Heritage buildings and structures, including multi-use assets, can be unique, irreplaceable, and have intrinsic value beyond the basic cost of the materials and the labor used to build them.

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[8] Class "C" estimate is an approximation based on the square foot costs of similar construction. It does not include the cost of support utilities and structures, such as water and electrical utilities or sidewalks and conduits.

[9] Multi-Use Assets meet the definition of a heritage asset but currently have a predominant use that could be accomplished by a non-heritage asset.

They are properties valued because of their historical or cultural associations and/or as sources of historical or scientific information. Heritage assets, for the purposes of this policy, are limited to historic buildings and structures because they are the only assets that are reported to FRPP and that must have a CRV and condition index.

It is Department of the Interior policy to manage heritage assets in ways that preserve their cultural, historical, and scientific values. This policy is mandated by Federal laws, such as the National Historic Preservation Act (NHPA) and the Archaeological Resources Protection Act (ARPA), and executive orders such as EO 13287 "Preserve America" In addition, the Secretary of the Interior's Standards for the Treatment of Historic Properties provide guidance on the preservation and protection of historic buildings and structures. These statutes, Executive Orders, and Standards identify the Federal Government's lead role in preserving, protecting, maintaining, and using its historic properties.

For historic buildings and structures, a CRV based on standard industry construction costs may not accurately reflect the cost of replacing the asset using historically accurate materials and construction techniques. A replacement-in-kind CRV estimate—one that captures the costs associated with using historically accurate construction techniques and materials— may be needed to create an accurate CRV estimate.

Replacement-in-kind costs may not be commonly found in industry standards and often must be determined on a case-by-case basis utilizing the expertise of cultural resource professionals familiar with the heritage asset being evaluated. These experts include architects, archaeologists, architectural historians, and tradesmen expert in historic materials and their application. Planning/design, pre-and post-rehabilitation documentation, project management, special studies (e.g., historic preservation compliance, geothermal, hydrologic), permits, and special assessments should be included in the CRV. Indirect costs, which include salaries and benefits for government employees, are covered by annual appropriations and will not be added to estimated costs for CRV and DM, nor will they be included in the numbers reported to the Department for the annual DM display in the Department's financial statement or any bureau financial statement.

An example referenced in Section III (Defining Deferred Maintenance) of this policy is pertinent here, which involves replacing the roof of a Civilian Conservation Corps cabin. Once the maintenance is defined, the needed materials would be identified by a professional with historical or cultural resources expertise and the items secured from an appropriate vendor. The roof is repaired in a manner consistent with roofing techniques of the era.

V. Calculating CRV and DM

CRV and DM estimates are to be calculated using the methodologies specified in this Policy for:

A. Non-heritage buildings;
B. Non-heritage structures;
C. Heritage buildings and structures;
D. Road assets; and

E. Dams, water distribution systems, and power assets.

Consistent application of the following methodologies defined in this section will ensure consistency in resultant FCI values across the DOI portfolio. All bureaus will use the CRV and DM methodology as set forth in this section. The methodology described in this Section will be used to create CRV and DM estimates for buildings and structural assets. The CRV and DM for these assets will be calculated using the same factors from the same industry standard cost databases, when such cost data is available. Without exception, the resultant value for FCI will be between 0 and 1.0.

Indirect costs, which include salaries and benefits for government employees, are covered by annual appropriations and will not be added to estimated costs for CRV and DM, nor will they be included in the numbers reported to the Department for the annual DM display in the Department's financial statement or any bureau financial statement.

Consistent application of CRV and DM calculation methodology across bureaus is the Department's primary goal. Realizing this goal will lead to valid comparison of Facility Condition Index (FCI) for assets in the Department's portfolio.

A. Non Heritage Building CRV and DM Estimate

Labor: Labor rates will include the average percentage contractor markups applied to base labor rates provided on the back page (table "Installing Contractor's Overhead and Profit") of the back of the RS Means Building Construction Cost Data guide. Bare labor costs will not be used.

Materials: Use the total cost amount (column titled "Total including O&P") from the most recently published version of the RS Means Building Construction Cost Guide, the most recently published version of the RS Means Facilities Construction Cost Data guide, or the most recently published version of any cost guide available in the suite of RS Means cost guides. Bare materials costs will not be used for estimating.

Materials Not Covered by RS Means: If RS Means does not provide cost data for a specific material item, a price quote for that item will be obtained from a vendor or acquisition costs from recent contracts can be used to estimate the cost of the item. Labor installation costs will be estimated using the most recently published version of the RS Means Facilities Construction Cost Data guide or the most recently published version of any cost guide available in the suite of RS Means cost guides. If installation costs for non-RS Means materials do not exist, data provided by external or internal consultants can provide rates for the estimate. The source of these estimates and their supporting assumptions must be documented.

Fees and Markups: Apply the percentages below, which were taken from the most recently published version (2007) of the RS Means Square Foot Costs guide and the most recently published version (2008) of the RS Means Facilities Construction Cost Data guide. The appropriate percentage should be applied based upon anticipated project cost. RS Means cost guides were used to select the below percentages.

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Item	DM Project or CRV Costs ≤ $1,000,000	DM Project or CRV Costs > $1,000,000
General Requirements (G)	15%	10%
Overhead (O)	15%	10%
Profit (P)	10%	10%
Design Fee (D)	15%	10%
Estimating Contingency (C)	20%	15%

CRV Estimate (CRV) Calculated As:
In the below formula, the capital letters correspond to the items in the above table. The percentages shown in the table should be summed and used as decimals.
CRV is the sum of the following items:

(Labor + Materials) multiplied by LAF (local adjustment factor)
+ (Labor + Materials) multiplied by (G+O+P)
+ {(Labor + Materials) + (Labor + Materials) multiplied by (G+O+P)} multiplied by C
+ {(Labor + Materials) + (Labor + Materials) multiplied by (G+O+P)} multiplied by D

= CRV Estimate Total

Note that the same equation is used to create a DM estimate.

B. Non-Heritage Structure CRV and DM Estimate
The methodology for creating structure CRV and DM estimates is the same as buildings and structures with the following exceptions:

1) Heritage and multi-use building and structural assets, roads, dams, power assets, and water distribution systems have their own asset specific methodologies for creating CRV estimates (see Sub-Section C, D and E below).

2) If RS Means does not provide cost data for a specific equipment item, such as a turbine or pump, a price quote for any equipment that exceeds $5,000 in cost will be obtained from a vendor. Labor installation costs will be estimated using the most recently published version of the suite of RS Means cost guides.

3) All equipment quotes for equipment that exceeds $5,000 in cost must be documented. The vendor name, location, and the date the quote was received will be documented. The name of the equipment and its identifying number (order or serial number) will also be recorded along with a brief written description of the equipment.

C. Heritage Asset and Multi-Use Asset CRV and DM Estimate
The CRV and DM estimates for these assets will be computed by using the methodology hierarchy below. If data is unavailable to calculate the CRV at the first hierarchal tier, the

second tier will be used and then the third. The three tiers may be used in combination as required.

The tiers will be used for historic structures and buildings, including their component features, to ensure consistent and repeatable CRV and DM estimates and conformance with historic preservation standards. The costs of supplemental services, pre-design, design, management, special studies, and historically accurate materials and workmanship must be included. All estimates should be coordinated with heritage asset and cultural resource staff.

Tier I: Use the RS Means standard industry costs with added cost factors, if necessary, to estimate CRV and DM. The added factors and the assumptions underlying them should address the specific needs of the asset and be clearly documented in the estimate.

Tier II: Use cultural resource professionals to estimate the CRV and DM. These professionals include historical architects, archeologists, architectural conservators, and craftsmen expert in historically accurate materials and workmanship. All estimating and material cost assumptions must be documented in the estimate.

Tier III: Use cost quotes from contractors with expertise in historically accurate materials and workmanship required to estimate CRV and DM. All estimating and material cost assumptions must be documented in the estimate.

D. Road CRV and DM Estimate

To calculate CRV and DM for a road, and to identify the correct condition assessment methodology, the road must first be assigned to the appropriate DOI Road Band. The DOI Road Band system is comprised of five functional tiers; each tier has minimum requirements for calculating CRV and DM estimates and for performing condition assessments. The DOI Road Band functional tiers are defined in the table below.

DOI Road Band	Road Band Description
Tier I	Parkways and City Streets. Parkways are restricted access facilities and serve high volumes of traffic in an urban area. City Streets are extensions of a municipal or urban street system within a DOI managed system.
Tier II	Principal roads that constitute the main public access route to and within parks, refuges, reservations, recreation areas, or other DOI managed lands or facilities.
Tier III	Connector roads that provide access within a park, refuge, reservation, or parcel of DOI managed lands.
Tier IV	Administrative, restricted, and special purpose roads that provide access to administrative facilities, campgrounds, concessionaire facilities, picnic areas, or other special interest areas within a park, refuge, reservation, or parcel of DOI managed lands.

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DOI Road Band	Road Band Description
Tier V	Primitive roads provide access to remote, primitive, and undeveloped areas on often rough or difficult to pass tracks.

Once a road is assigned to an appropriate tier the policy in this section is used to identify the minimum requirements for calculating CRV and DM estimates and performing condition assessments.

Condition Assessment Requirements

Tier I through Tier II (Parkways and City Streets and Principal Roads)

- Condition is assessed for equipment associated with the road. Equipment may include pavement[10], drainage, and roadside appurtenances such as signs, guardrails, retaining walls, low water crossings, gates, cattle guards, and culverts, among others.
- Each equipment type is assessed individually and the assessment method and guidance used are defined and documented for each type of equipment.
- Road pavement/surface assessment must use industry standard methods. Industry standard methods are defined as any method approved or implemented by the Federal Highway Administration (FHWA), such as the Pavement Condition Rating system, or any other published and widely used systems such as the University of Wisconsin PASER[11] system, the Metropolitan Transportation Commission pavement condition index system, and the MicroPAVER™ rating system developed by the US Army Corps of Engineers.

Tier III through Tier V (Connector Roads and Administrative, Restricted, and Special Purpose Roads)

- Condition assessment may be limited to an assessment of the pavement/surface as a surrogate for the entire asset.
- If individual equipment types are included in the condition assessment, they may be considered in the aggregate, rather than being assessed and documented individually.
- Bureaus may define appropriate pavement/surface condition assessment methods provided each method is reviewed and approved by FHWA for adequacy and consistency. At a minimum, all methods will be based upon ratings derived from the observed severity and extent of pavement distress[12].

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[10] Pavement is defined as any structural or surface course placed in layers above a prepared subgrade. Pavements range from asphalt, concrete, surface treated earth roads and stabilized materials to loose surfaces such as earth, shell, crushed stone, and bank run gravel.

[11] PASER is the Pavement Surface Evaluation and Rating. It is applicable to native, gravel, asphalt, or concrete surfaces and links type, number and severity of defects with the type of maintenance treatment required.

[12] Distress is cracking, rutting, and roughness

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All Tiers

- Bridge and tunnel condition assessment methods will comply with federal requirements defined by the National Bridge Inspection Standards (23 CFR 650.303 (c)) and the American Association of State Highway and Transportation Officials Manual for Condition Evaluation of Bridges (AASHTO MCEB–2). Exceptions can be made for bridges that no longer carry vehicle loads.

DM Requirements

All Tiers

- All DM is identified based upon direct observation of distress per the condition assessment requirements specified for each roadway tier.
- The DM estimate is the cost of work necessary to correct the observed distress and return the facility to good condition. DM does not include any improvement to the original function or capacity of the asset.
- DM estimates are based upon unit costs for various types of repair and construction activities. Unit costs are expressed in common units of measure ($/square ft, $/each, $/linear ft, etc.) and are derived for common roadway repair activities such as paving, culvert replacement, surface treatment, gravel layer placement, and so forth.
- All unit costs are based upon national averages. These averages will be adjusted by the Location Adjustment Factor defined on page fifteen of this policy to account for local cost variance.

Tier I (Parkways and City Streets)

- Unit costs for estimating DM are based upon data from completed road and bridge projects. Analysis of FHWA project costs and/or bureau project costs is performed to generate unit costs. Procedures used to generate the unit costs must be documented.
- Unit costs include adjustments to account for the high cost of working in an urban environment. High cost is caused by the need for complex traffic control systems, the high cost of mobilization, and working in and around limited rights-of-way, buildings, and utilities. These costs may be acknowledged as separate line items or incorporated directly into the unit costs, but the assumptions used to generate them must be documented.
- DM estimates are prepared and documented for equipment types on an individual basis.

Tier II and Tier III (Principal Roads and Connector Roads)

- Unit costs for estimating DM are based upon data from completed road and bridge projects. Analysis of FHWA project costs and/or bureau project costs is performed to generate unit costs. Procedures used to generate the unit costs must be documented.
- DM estimates are prepared and documented for equipment types on an individual basis.

Tier IV and V (Administrative, Restricted, and Special Purpose Roads and Primitive Roads)

- If unit costs for completed road and bridge projects are unavailable, unit costs for DM estimates can be based upon RS Means or other industry standard sources. The table containing fee and markup percentages on page nine of this policy shall be applied when DM is estimated from RS Means data or a similar source. Source data and assumptions used to create the estimate must be documented.

- Equipment types do not need to have individual DM estimates. The estimates can be prepared and presented in the aggregate.

CRV Requirements

All Tiers

- All unit costs are based upon national averages. These averages will be adjusted by the Location Adjustment Factor defined on page fifteen of this policy to account for local cost variance.
- CRV estimates can be based upon unit costs for each individual equipment type or a unit cost based upon cost per mile of construction may be used.
- When unit costs per mile of construction are used, they must be adjusted to account for the cost structures presented by different terrain types. At least four terrain factors – urban, level, rolling, and mountainous - must be available to adjust unit costs.
- Unit costs per mile must also be adjusted if unique terrain characteristics are present that will significantly increase the cost of construction. Examples are terrain that has a high moisture content, inherently weak soil, or that is very unstable.
- If unit costs per mile are used to create an estimate, the width of the road used to derive the unit cost must be specified. Note that unit cost per mile must be adjusted if it is being used to estimate CRV for a road with a width different from the road width used to derive the unit cost. A ratio of the two road widths can be used to make the necessary adjustment to the unit cost per mile.
- In some instances, a road that meets the definition of a Tier I road may actually have a DM and CRV cost structure that is more accurately represented by a Tier II road. For instance, city streets in small towns or in large cities that can be closed for construction may not have the high cost structure typically associated with Tier I roads that cannot be closed. Tier II cost structures may be used to estimate CRV for some Tier I roads provided it will result in a more defensible CRV estimate and the reason(s) Tier II costs were used are documented.

Tier I (Parkways and City Streets)

- Unit costs are based upon industry-specific data from road and bridge new construction or full reconstruction projects. Analysis of FHWA and/or bureau project costs is performed to generate unit costs. Cost determination procedures are documented.
- Unit costs include adjustments to account for the high cost of working in an urban environment. High cost is caused by the need for complex traffic control systems, the high cost of mobilization, and working in and around limited rights-of-way, buildings, and utilities. These costs may be acknowledged as separate line items or incorporated directly into the unit costs, but the assumptions used to generate them must be documented.

Tier II and Tier III (Principal Roads and Connector Roads)

- Unit costs are based upon industry-specific data from road/bridge new construction or full reconstruction projects. Analysis of FHWA and/or bureau project costs is performed to generate unit costs. Cost determination procedures are documented.

Tier IV and Tier V (Administrative, Restricted, and Special Purpose Roads and Primitive Roads)

- If unit costs for completed road and bridge projects are unavailable, unit costs for CRV estimates can be based upon RS Means or other industry standard sources. The table containing fee and markup percentages on page nine of this policy shall be applied when DM is estimated from RS Means data or a similar source. Data sources and assumptions used to create the estimate must be documented.
- Cost adjustment for terrain type may not apply to primitive roads or other assets that were constructed without engineering design. These roads were often built at grade and CRV estimates for them may not need to include earthwork, earth retention structures, large culverts, or other equipment types typically associated with engineered roads in mountainous or rolling terrain. The CRV for these facilities may be estimated by using the "flat" terrain factor if generalized unit costs are employed.

Roads Located on Other Reportable FRPP Assets

The DOI inventory contains numerous roads that are located on the top of levees, dikes, and other assets that have data reported to FRPP. The DM and CRV estimates for these roads will only include the work required to repair the constructed surface or replace it, respectively. If erosion or some other cause has degraded the width or structural integrity of the road so that it can no longer support the safe passage of passenger vehicles, the repairs needed to restore the constructed surface shall be reported to FRPP as road DM.

Repairs to the levee, dike, or other constructed feature beneath the constructed surface shall be assigned to those assets, not to the road.

Trails

The road section of this policy document is not applicable to DM and CRV estimates for trails. The National Trail Data Standard is the controlling policy for trails.

E. Dams, Power Assets, and Water Distribution Systems CRV and DM Estimate

The CRV and DM estimates for these assets will be computed by using the methodology hierarchy below. If data is unavailable to calculate the CRV at the first hierarchal tier, the second tier will be used and then the third.

Tier I: Original Construction Costs Known. Identify the asset's original construction date and acquisition cost. Apply the appropriate index value from the Construction Cost Trend Index to the original acquisition cost for the asset type (concrete dam, diversion dam, etc.) to create a CRV for the asset. Capital improvements that added to the value of the asset should be included in the CRV calculation by identifying the original date of the capital improvement and its cost and applying the appropriate index value. If an index value is not available for an asset type, use the Composite Cost Trend Index located at the bottom of the bottom of the index table. The Construction Cost Trend Index table is located at: **http://www.doi.gov/pam/assetmanage.html**. The table will be updated annually and maintained on this website. Appendix 9 contains the formula for indexing original acquisition cost to present year dollars.

Tier II: Original Cost is Unknown. Identify an asset that is similar in size, function, and construction materials that has original construction date and acquisition cost data. Use the original acquisition cost data for that asset and update it to current year dollars by using the same procedure specified for Level One.

Tier III: Original Cost is Unknown. No similar asset is in close proximity. Use the most recent version of the RS Means Heavy Construction Cost Data to estimate the CRV. If RS Means does not provide cost data for a specific work activity or equipment item, price quotes shall be obtained from a vendor and documented in the estimate. Labor costs will be estimated using the most recently published version of the suite of RS Means cost guides.

F. Location Adjustment Factor

The RS Means three-digit weighted average zip code adjustment factors will be used to adjust for locality cost variation. The same zip code adjustment factor applied to CRV must be applied to DM estimates. If individual bureaus have developed their own local cost indices and they are based upon actual costs from completed construction contracts, they may submit documentation to DOI requesting the ability to use their own cost index in lieu of the RS Means three-digit weighted average zip code adjustment factor.

Documentation must provide a general description of the methodology used to create the index, the number of completed construction contracts used to complete the index, and the number of distinct locations (parks, refuges, reservations, recreation areas, or other DOI managed lands or facilities) from which completed construction contracts are drawn. If a bureau's local cost index is approved by DOI, other bureaus may use those index values provided they are in close proximity and representative of the cost structure to be encountered in a specific geographic area. Again, the locality factor must be applied to both the CRV and the DM estimates.

G. Adjustment for Inflation

CRV and DM estimates will be adjusted for inflation each year by applying the appropriate RS Means three-digit weighted average zip code adjustment factor. The most recently published annual national index value will be used. The adjustment will be completed by April 1 each year.

H. Annual Display of DM for the Financial Report

The required reporting range for DM will be -15 for the low total to +25 percent for the high total of the summed DM values reported by each of the bureaus. Indirect costs, which include salaries and benefits for government employees, are covered by annual appropriations and will not be added to estimated costs for DM, nor will they be included in the numbers reported to the Department for the annual DM display in the Department's financial statement or any bureau financial statement.

I. Increasing Competency in the Use of Industry Standards for Estimating Costs

Bureaus are required to ensure that only qualified individuals develop DM and CRV cost estimates. Because accurate, valid cost estimating is complicated, the bureaus must provide

required training to ensure cost estimating tools are used properly or deploy simple-to-use cost estimating tools.

VI. Asset Condition

Articulating asset condition enables bureau managers to address a major asset management question, "What is the condition of my portfolio?" The relative condition of owned assets is measured using the FCI, which is an accepted industry metric for determining the condition of assets. FCI is used to measure the condition of all buildings and structures in the DOI real property portfolio that is reported into the government-wide Federal Real Property Profile (FRPP). Facility Condition Index is calculated for assets by dividing the cost of Deferred Maintenance by the Current Replacement Value. The result of this formula is a value that is never less than zero and never greater than 1.0. An asset with an FCI of 0 is in excellent condition and an asset with a rating of 1.0 is in very poor condition. Condition Index (CI) as reported in the FRPP for each asset is calculated by using the following algorithm; CI = (1 – FCI rating) X 100. An asset with a CI of 100 is in excellent condition and an asset with a rating of 0 is in very poor condition.

FCI estimates are based upon condition assessments and Class C cost estimates. The deferred maintenance (DM) and current replacement value (CRV) estimates used to calculate FCI should not be used for program formulation. Estimates for the actual replacement of individual facilities and projects must incorporate a higher level of detail and accuracy than the DM and CRV estimates used to calculate FCI provide. Estimates for actual replacement cost or project cost should achieve a Class A or Class B estimate prior inclusion of the projects in a budget request. (See Appendix 2 for supplemental guidance on identifying the types of assets and component parts that are to be considered when calculating the FCI for a constructed asset.)

FCI is not always an appropriate measure for determining the condition of high valued assets. The enormous cost of replacing many large dams, power assets, and water distribution systems often results in distorted FCI values because the CRV for these assets are several orders of magnitude larger than the associated DM. This results in FCI values that are so small that they provide little value for assessing asset condition and are not useful for managing an asset portfolio.

To address this issue, the Department will calculate FCI for the above assets by combining deferred maintenance need (FCI_{dm}),[13] major rehabilitation and replacement need (FCI_{mr}),[14] and

[13] Deferred Maintenance Index (FCI_{dm}) – Deferred maintenance divided by current replacement value. Deferred maintenance is maintenance that was scheduled, but not accomplished, and subsequently deferred to the future.

[14] Major Rehabilitation and Replacement Index (FCI_{mr}) - Major rehabilitation and replacement costs divided by the current replacement value of the asset. This includes the cost of safety-of-dams modification work and the cost of restoring an asset to a condition substantially equivalent to its originally intended capacity, efficiency, or capability.

indicated maintenance need (FCI_{im})[15] into a single measure, FCI_{comp}, which stands for FCI comprehensive. The use of the combined FCI_{comp} measure will provide a better indication of an asset's condition than the CI measure defined by FRPC, and therefore provide more useful information to asset managers. The resultant value for condition will be reported in the FRPP.

The CI is calculated with the formula below:

$$FCI_{comp} = (FCI_{dm} + FCI_{mr} + FCI_{im})/CRV$$

The FCI_{comp} is used to calculate the CI_{comp} measure, which will be reported as the FRPC-defined CI value to the FRPP. The formula for CI_{comp} is below:

$$CI_{comp} = (1.0 - FCI_{comp}) \times 100$$

Other first-tier metrics reported by DOI at the individual asset level in the Federal Real Property Profile (FRPP)[16]may be useful in conjunction with the FCI to properly categorize condition as acceptable and unacceptable. The FCI is to be used with a fully developed Asset Priority Index (API) that rates each existing or proposed owned and leased asset in the inventory based on its importance in carrying out the DOI mission and achieving strategic goals. (See Appendix 5 for an overview of the DOI FCI/API analysis.) With baseline FCI's established from the existing data, bureaus can prepare to answer another question, "What condition level should a particular asset be maintained to provide the mission support functionality required?" These FCI target ranges will vary based on asset type and bureau mission. Using the two metrics of API and FCI will help bureau managers set acceptable baseline FCI ranges.

Second-tier metrics may also be useful in conjunction with the FCI to properly categorize condition as acceptable or unacceptable. Failure of a critical system or asset component can be considered as justification for an asset investment even though the cost of repair does not render the asset in unacceptable condition. For instance, if a $2 million elevator replacement on an asset with CRV of $100 million results in an FCI of .02; managers not responsible for the operations and maintenance of the asset might consider in acceptable condition and not qualify the asset or project for funding. If the failure of the elevators resulted in making the asset unusable, an asset manager would still be justified in correcting the deficiencies on this critical subsystem.

Criticality of components might also play a role in asset management decision-making on other assets where a critical component represents a small portion of an asset's CRV. An asset may not have any critical or serious deficiencies, i.e., it is in an acceptable condition but still be

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[15] Indicated Maintenance Index (FCI_{im}) –The cost of addressing maintenance-related recommendations noted in periodic condition assessments divided by the current replacement value of the asset.

[16] Performance metrics reported into the FRPP are FCI (or condition index), mission dependency, annual operating costs and utilization. These metrics, reported into the FRPP by all Federal agencies are referred by the Federal Real Property Council as first-tier metrics. Second-tier metrics are agency-level based measures to be used in conjunction with the first-tier metrics to measure asset performance.

unacceptable because the asset does not meet functional requirements. This is usually not reflected in the "condition" of an asset. For example, a maintenance facility may not meet the functional requirements needed for a full service maintenance shop even though the FCI of the building is acceptable (see Description of Second-Tier Metrics in Appendix 6).

VII. Systems Support

Data on FCI and CRV will be formulated and maintained utilizing the Facility Maintenance Management System (FMMS) and the Financial and Business Management System (FBMS)[17]. These web-based information systems allow bureau staff to store and manipulate data for each asset and each asset type in the real property inventory. FMMS will interface with the FBMS and will provide the bureaus and Department with a method to collect and analyze comparable facility information in a timely and efficient way. The FMMS and FBMS will be automatically linked with asset inventory information, performance measures data, and financial and accounting information.

The FMMS, a standardized single-platform Departmental solution for facilities management, is a cornerstone in the strategy for improving the management of the Department's constructed assets. This system is an important tool for improvement of the overall condition of the constructed assets, better allocation and utilization of the limited resources dedicated to maintaining those assets, and providing accurate and timely information to the Office of Management and Budget, the Congress, and the public. The core functions of the FMMS include the following (see Appendix 7 for an overview of the standardized single platform FMMS):

- The ability to capture the cost of current and deferred maintenance need as well as capital improvement costs for all constructed assets and relate them back to unique asset numbers assigned from FBMS. Each work order, upon completion, will contain materials, contract, and burdened labor costs to enable documentation of the full costs of activities. This capability will allow the DOI, bureau and field sites to develop asset-based maintenance histories on all constructed assets.
- The ability to record the complete history of maintenance and capital improvement activities accumulated over time for each individual constructed asset to enable documentation of full life-cycle costs.
- The ability to record individual components of constructed assets identified in FMMS so that component renewal costs can be planned and monitored.
- The ability to record maintenance deficiencies identified through condition assessments in FMMS in the form of work orders. Scheduling of condition assessments may also be accommodated within the FMMS.

[17] The FBMS is an integrated tool that will help Interior's bureaus manage their many unique missions. FBMS will help bureaus manage a variety of administrative functions, including: Budget Formulation, Budget Execution, Personal Property, Real Property, Fleet, Core Financials, Acquisition, Travel, Financial Assistance, and Enterprise Management Information System (EMIS). FBMS will also interface with the Federal Personnel and Payroll System (FPPS), the Bankcard system, and the Quarters Management Inventory System (QMIS) as well as many other bureau-specific systems

- The ability to calculate the Facility Condition Index for individual constructed assets. Accumulate deferred maintenance and capital improvement needs information to allow preparation of Five-Year Deferred Maintenance Plans and Five-Year Construction Plans as required by Attachment G of the DOI budget guidance.
- Provide Five-Year Deferred Maintenance and Construction Completion Reports as required by Attachment G of the DOI budget guidance.
- Provide a mechanism to store job plans and associated information needed to implement a preventative maintenance program.
- Provide data standardization to assist in the utility of FMMS and, to the extent feasible, data sharing (e.g., job plans, standardized definitions, value lists, and business processes associated with the data standardization).
- Ensure the use of the Standard DOI Asset List and the standard definitions and codes for Work Types and Work Status.
- Provide a Cost Estimating linking capability.

The FBMS will contain all fields necessary for government-wide real property inventory reporting. Data elements for property records in the FBMS include key fields on the number, size, location, use, type, occupants, and age of the assets. The FBMS will be the system of record for the 24 FRPP data elements developed by the FRPC that DOI and other Federal agencies will report for their real property assets. Inventory data for DOI-constructed assets, including the assets' associated FCI rating, will be uploaded to FBMS from the FMMS. These data elements will be shared between FMMS and FBMS as necessary for business process requirements.

The integration of financial and asset management functions within the FBMS allows the real estate module to directly accrue all financial information associated with a facility, asset, or rental unit, including labor, contracts, rental income, materials, supplies and utilities. In addition, once the interface with the single-platform FMMS is complete, the system will be able to collect all costs associated with work orders generated in the FMMS.

This capability will allow DOI to understand and provide a brief description of each owned and operated asset, current use, location, major subsystems and components, and other general information. The extent of information required will be appropriate to the size of the investment, management, and reporting requirements. This information will be required for new assets that are evaluated as part of portfolio management.

VIII. Appendices

- Department of the Interior Issued Asset Management Guidance and Tools
- Assets Required to Have an FCI and Their Components
- Glossary
- Overview of the Condition Assessment Program in the Department of the Interior

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Policy on Deferred Maintenance, Current Replacement Value and Facility Condition Index in Life-Cycle Cost Management

- Over Second-Tier Metrics
- Overview of the DOI FCI/API Analysis
- Overview of the Department's Standard Platform Facility Maintenance Management System
- Frequently Asked Questions
- Formula for Inflating Cost to Present Year Dollars
- References

Appendix 1

Department of the Interior Issued Asset Management Guidance and Tools

- Asset Management Plan; Revised June 2007
  The Plan presents DOI's strategic vision and plan of action for compliance with the President's executive order and the methodology of asset management for:
  - Owned and leased buildings;
  - Structures;
  - Linear assets;
  - the Motor vehicle fleet; and
  - Non-Stewardship land used for administrative purposes.[18]
- Operations and Maintenance Costs Methodology; Issued July 2005
  The Methodology provides guidance on identifying annual recurring maintenance and repair costs that are currently captured by the Interior bureaus at the constructed asset level.
- Sustainment Cost Template for Constructed Assets Issued August 2005
  The Template is an aid in developing their Deferred Maintenance and Capital Improvement 5-Year Plans. The completed template for a constructed asset will give an overall picture of whether a particular asset should be repaired, renewed or disposed.
- Asset Management Plan Template; Issued September 2005
  The Template provides guidance on the components to be addressed in the bureau Asset Management Plan (AMP). The Bureau AMP, prepared by each bureau, will provide a framework, strategic vision and plan of action for effective bureau facility management. It will be a succinct document to be used by field and management staff for implementing the DOI Asset Management Plan.
- Asset Priority Index Guidance; Issued September 2005
  The Guidance establishes the standard for developing an API framework, determining an API score, interpreting an API score and validating scores.
- DOI Utilization Guidelines Issued October 2005
  The Guidelines are to provide assistance to asset managers in determining the utilization value of assets to be captured in the Federal Real Property Profile (FRPP) in FY 2006. This guidance covers four predominant use categories of constructed assets: Offices, Warehouses, Housing, and Laboratories[19].
- Site-Specific Asset Business Plan (ABP) Model Format Guidance Issued December 2005
  The Guidance is to aid the bureaus' asset managers in structuring the requirements of the ABP that best support the Bureau Asset Management Plan (AMP). The model format is a tool that defines the general criteria that needs to be reflected in an ABP.

[18] Non-stewardship land is considered to be the land associated with constructed assets such that it would be impractical to try to separate for sale.
[19] Hospitals are a fifth category of constructed assets for which utilization is to be reported. DOI does not have hospitals in its inventory,

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Assets Required to Have an FCI and Their Components

I. Purpose

The purpose of this Appendix of the "Guidance on Deferred Maintenance, Current Replacement Value and Facility Condition Index in Life-Cycle Cost Management" is to identify the types of assets and component parts that are to be considered when calculating the Facility Condition Index (FCI) for a building or structure. The guidance contained in this Appendix is to help ensure DOI managers in the field calculate and apply FCI properly and consistently.

II. Application of FCI

FCI is used to measure the condition of all buildings and structures in the DOI real property portfolio that is reported into the government-wide Federal Real Property Profile (FRPP) (see Section A of this Appendix for the list of FRPP Predominant Use Categories and Codes[20]). Articulating the condition of assets enables bureau managers to address a major asset management question, "What is the condition of my asset portfolio?"

The inclusion of asset components, such as exhibits, cultural and maintained landscapes, appliances, other types of personal property, among others, in calculating the CRV and DM costs for buildings and structures skews the Facility Condition Index of these constructed assets and can result in an FCI value that may not reflect the assets true condition. Therefore, these components are not included in the calculation of FCI.

To maintain the integrity of FCI as a metric for measuring condition, only asset components and substructures that directly contribute to the integrity and the functionality of the constructed asset are to be factored into calculating the DM costs and CRV, and must be consistently applied by bureau managers Department-wide.

III. Relevant Asset Components and Substructures in Determining Facility Condition Index

In calculating FCI for a constructed asset, only the relevant asset components and substructures of the asset should be factored into the calculation. Consistency in calculating FCI within a facility, the region, the bureau and the Department ensures that FCI is relevant as a performance metric for an individual asset or for comparing assets across a portfolio. It is recommended that managers focus on monitoring critical equipment, such as the roof and HVAC system, which affects the ability of the building or structure to function.

The list provided in Section B of this Appendix is representative of the types of asset components and substructures that are to be factored in the FCI calculation for buildings and structures. The list will be periodically updated.

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[20] Source: 2007 Guidance for Real Property Inventory Reporting issued by the General Services Administration on June 8, 2007.

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Assets Required to Have an FCI and Their Components

Managers in the field should consult with their bureau Asset Management Program staff if they are unsure concerning the asset components and substructures that need to be factored into the calculation. Bureau managers in the field can also consult their bureau representatives to the DOI Asset Management Partnership. See the list of at bureau representatives to the Partnership at: http://www.doi.gov/pam/Partnership0308.html.

FRPP Predominant Use Codes

Buildings

10 *Office:* Buildings primarily used for office space or headquarters.

14 *Post Office:* Buildings or portions of buildings used as a Post Office.

21 *Hospital:* Buildings used primarily for furnishing in-patient diagnosis and treatment under physician supervision and having 24-hour registered graduate nursing services.

22 *Prisons and Detention Centers*

23 *School:* Buildings used primarily for formally organized instruction, such as schools for dependent children of Federal employees, Indian schools, and military training buildings including specialized training facilities.

29 *Other Institutional Uses:* Buildings used for institutional purposes other than schools, hospitals, and prisons, such as libraries, chapels, museums, and out-patient clinics. This category also includes food preparation and dining facilities, buildings housing entertainment and recreational activities, and visitor's centers.

30 *Family Housing*: Buildings primarily used as dwellings for families/dependents. Includes Federal employee housing.

31 *Dormitories/Barracks*: Buildings primarily used as dwellings for housing individuals (without families/dependents).

41 *Warehouses*: Buildings used for storage, such as ammunition storage, covered sheds, and buildings primarily used for storage of vehicles or materials. This category excludes water reservoirs and POL storage tanks which are storage structures.

50 *Industrial:* Buildings specifically designed and primarily used for production or manufacturing, such as the production or manufacture of fish production and chemicals. Included are buildings that house utility plants or utility system components such as pump stations or valves.

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Asset Components and Sub-Structure Factored into FCI Calculations

60 *Service:* Buildings used for service activities, such as maintenance and repair shops, dry cleaning plants, post exchange stores, airport hangars, and buildings primarily used for vehicle maintenance and repair.

72 *Communications Systems:* Buildings used for telephone and telegraph systems, data transmission, and/or associated with radio towers or other communications facilities.

73 *Navigation and Traffic Aids*: Includes buildings that house aircraft or ship navigation and traffic aids, such as beacon lights, antenna systems, ground control approach systems, and obstruction lighting.

74 *Laboratories*: Buildings used directly in basic or applied research in the sciences and in engineering, such as meteorological research laboratories; and buildings used in designing, developing, and testing of prototypes and processes for chemistry and physics. Excluded are medical or industrial laboratories used for routine testing.

80 *All Other*: Buildings that cannot be classified elsewhere.

Structures

12 *Airfield Pavements:* Runways, helicopter landing pads, taxiways, and aprons.

13 *Harbors and Ports:* Docks, piers, wharves, jetties and breakwaters, and other harbor, port, or coastal facilities.

15 *Power Development and Distribution*: Hydroelectric and other power development projects that produce power for resale (generally consisting of dams and powerhouses). Include transmission lines that are an integral part of Federal power development, even if the power is produced by another Federal agency.

16 *Reclamation and Irrigation*: Canals, laterals, pumping stations, storage, and diversion dams.

18 *Flood Control and Navigation*: River improvements, revetments, dikes, dams, and docks.

40 *Storage (other than buildings):* Storage tanks, silos, igloos, underground vaults, and open storage improved areas. This category includes water reservoirs and POL storage tanks.

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Asset Components and Sub-Structure Factored into FCI Calculations

50 *Industrial (other than buildings):* Structures and facilities (other than buildings) used for production or manufacturing, such as sliding shipways, retaining basins, and pipelines.

60 *Service (other than buildings):* Structures used for maintenance and repair, such as underground fueling systems, vehicle washing and greasing facilities and ship repair structures.

65 *Space Exploration Structures*: Structures used in direct support of space exploration and testing, including test structures and specialized associated structures that cannot be classified elsewhere.

66 *Parking Structures:* Independent structures for non-residential parking of more than two vehicles.

70 *Research and Development (other than laboratories):* Structures and facilities used directly in basic or applied research in science, medicine, and engineering, such as facilities used in the design, development, and testing of prototypes and processes and space and aeronautics research and development. Excludes facilities used for routine testing.

71 *Utility Systems:* Heating, sewage, water, and electrical systems that serve several buildings or other structures of an installation. When these systems serve a single building that is reported separately, include the utility systems' cost in the cost of the building. Includes heating plants and related steam and gas lines, sewage disposal plants, storm and sanitary sewer lines, water treatment plants, wells, pump houses, reservoirs, and pipelines. Also includes electrical substations, standby or auxiliary power plants, lighting structures, and conduits.

72 *Communications Systems:* Telephone and telegraph lines, data cables, radio towers, and other communications-related structures.

73 *Navigation and Traffic Aids (other than buildings):* Structures for aircraft and ship navigation aids, such as beacon lights, antenna systems, ground control approach systems, and obstruction lighting. Includes demarcation lighting along runways, taxiways, and other airfield pavements.

75 *Recreational (other than buildings):* Outdoor recreational structures such as athletic fields and courts, stadiums, golf courses, and ski slopes.

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Asset Components and Sub-Structure Factored into FCI Calculations

76 *Roads and Bridges:* Federally-owned highways, roads, related culverts, and connecting bridges. Includes surfaced and unsurfaced roads within National parks and forests, military installations, and other Federal installations.

77 *Railroads:* Tracks, bridges, tunnels, and fuel or water stations servicing railroads.

78 *Monuments and Memorials:* Federal monuments, memorials, and statues.

82 *Weapons Ranges*: Ranges where weapons are fired and areas where explosives are detonated.

80 *All Other:* Sidewalks, parking areas, fences, and walking trails that cannot be readily classified under the above categories. Includes improvements to public domain lands, such as drainage, grading, and landscaping.

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Asset Components and Sub-Structure Factored into FCI Calculations

Roads
Cattle guards
Culvert - Plastic
Culvert – Concrete
Culvert – Metal
Paved Surface (Bituminous)
Paved Surface (Concrete)
Pavement Markings (Water Born)
Pavement Markings (Epoxy)
Pavement Markings (Thermoplastic)
Fencing/Gates – Wood
Fencing/Gates – Metal
Fencing/Gates – Concrete
Fencing/Gates -Masonry/Stone
Signage – Wood
Guard Rail – Steel
Guard Rail – Wood
Curb & Gutter – Concrete
Retaining walls
Signage - Metal
Signage - Concrete
Signage - Masonry/Stone

Bridges:
Surface
Sub-Surface
Signs
Guardrails
Retaining walls
Low water crossings
Gates
Cattle guards
Culverts
Abutments - Concrete
Deck - Concrete
Deck - Steel
Deck - Timber
Drainage Device
Parapet
Pier
Piles
Railing - Concrete
Railing - Steel
Railing - Timber
Superstructure - Steel
Superstructure - Timber

Trails[21]
Bench (Wood)
Bridge - Footlog
Bridge - Abutment (Rock)
Bridge - Abutment (Wood)
Bridge - Footlog (Handrail)
Bridge - Deck (Wood)
Bridge - Railing (Wood)
Cable Handrail
Checks (Rock)
Checks (Wood)
Crib Wall (Log)
Crib Wall (Rock)
Culvert - Closed (Metal)
Culvert - Closed (Rock)
Culvert - Open (Rock)
Fencing/Gates - Concrete
Fencing/Gates - Masonry/Stone
Fencing/Gates - Metal
Fencing/Gates - Wood
Paved Surface (Bituminous)
Paved Surface (Concrete)
Puncheons
Retaining Wall (Rock)
Retaining Wall (Concrete)
Signage - Concrete
Signage - Masonry/Stone
Signage - Metal
Signage - Wood
Steps (Steel Rung)
Swale
Trailhead Kiosk
Turnpikes (Wood)
Turnpikes (Rock)
Waterbars (Rock)

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[21] Please reference the National Trail Data Standard concerning asset components and sub-structure

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Asset Components and Sub-Structure Factored into FCI Calculations

Waterbars (Wood)

Campgrounds
Bench (Wood)
Bridge - Abutment (Rock)
Bridge - Abutment (Wood)
Bridge - Deck (Wood)
Bridge - Railing (Wood)
Culvert - Closed (Metal)
Culvert - Closed (Rock)
Culvert - Open (Rock)
Fencing/Gates (Concrete)
Fencing/Gates (Masonry/Stone)
Fencing/Gates (Metal)
Fencing/Gates (Wood)
Fire Ring (Metal)
Food Locker (Metal)
Hitch Racks (Wood)
Picnic Tables (Wood)
Signage (Concrete)
Signage (Masonry/Stone)
Signage (Metal)
Signage (Wood)
Tent Pads

Buildings
Substructures
Brick Foundation Walls and Piers
CMU Block Foundation Walls and Piers
Concrete Foundation Walls and Piers
Slab on Grade
Stone Foundation Walls and Piers
Wood Foundation Walls and Piers

Floor Construction
2" X 10" Floor Joist
2" X 12" Floor Joist
2" X 6" Floor Joist
2" X 8" Floor Joist
Aluminum Grating
Blanket Insulation
Bridging X Type At Floor Joists
Concrete
Galvanized Steel Grating
Hardwood Strip
Parquet
Plywood Subflooring
Steel Decking
Steel Grating
Terrazzo
Wood Gym Floor
Wood Plank

Roof Construction
2" X 10" Roof Joist
2" X 6" Roof Joist
2" X 8" Roof Joist
Plywood Roof Sheathing
Steel Roof Decking
Wood Roof Decking

Exterior Walls
2" X 4" Wood Framing
2" X 4" Wood Stud
2" X 6" Wood Framing
2" X 6" Wood Stud
2" X 8" Wood Stud
Adobe
Aluminum Siding
Aluminum Skirt Siding
Aluminum Wall Drip Edge
Batt Insulation
Brick
Seams
Wall Joints
Wall Vent Louvers
CMU
Brick Wall
CMU Wall
Coping Blocks
Cut Stone Wall
Masonry Columns
Random Stone Wall
Decorative Wood Columns
EIFS
Exterior Fascia Board

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Asset Components and Sub-Structure Factored into FCI Calculations

Fiberboard Insulation
Fiberglass Insulation
Fiberglass Panel Siding
Galvanized Corrugated Siding
Galvanized Wall Drip Edge
Glass Block
Insulated Steel Sandwich Siding
Masonite Hard Board Siding
Masonry Columns
Metal Coping
Molded Beadboard Insulation
Masonry/Concrete Wall
Metal Siding
Stucco Wall
Wood Siding
Rigid Polystyrene/Blueboard Insulation
Sill Plate (Up To 2" X 8")
Soffit Board
Structural Wood Columns
Stucco
Terra Cotta
Vinyl Siding
Wall Metal Trim/Flashing
Wall Sheathing Plywood
Wall Sheathing Wood Fiberboard
Wall Wood Trim
Wood Clapboard Siding
Wood Cornice
Wood Lattice
Wood Sheet Siding
Wood Shingle Siding
Wood Skirt Siding

Exterior Windows
Awning Aluminum
Awning Steel
Awning Vinyl Clad
Awning Wood
Exterior Window Frames
Casement Aluminum
Casement Steel
Casement Vinyl Clad
Casement Wood
Double Hung Aluminum
Double Hung Steel
Double Hung Vinyl Clad
Double Hung Wood
Glazing Compound In Window
Neoprene Gaskets
Metal Window
Wood Window

Exterior Doors
Aluminum Overhead Door
Exterior Door
Double Acting Solid Core Wood
Garage Hardboard
Garage Metal
Garage Wood
Motor Operator Rolling Door
Commercial Overhead Metal Door
Commercial Overhead Wood Door
Residential Garage Metal Door
Residential Garage Wood Door
Refinish Exterior Metal Door
Refinish Exterior Wood Door
Exterior Metal Door Frame
Exterior Steel Door
Exterior Wood Door
Exterior Wood Door Frame

Hardware
Revolving Aluminum
Sliding Patio Type
Steel Rolling Door
Steel Sectional
Store Front Aluminum
Wood Overhead Door

Roof Coverings
Aluminum Counter Flashing
Asphalt Shingle
Built-Up
Clay Tile
Copper
Copper Counter Flashing

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Asset Components and Sub-Structure Factored into FCI Calculations

Fiberglass
Membrane Flashing
Metal Flashing
Metal Panel
Metal Ridge Cap Flashing
Modified Bituminous
Modified Bituminous Flashing
Roll Roofing
Single-Ply/Thermoset
Slate
Wood/Cedar

Interior Partitions
Acoustic Carpet Wall Covering
Acoustic Wall Tile
Base Cabinet Hardwood
Base Cabinet Metal
Base Cabinet Wood
Bench Aluminum
Bench Cast Iron
Bench Concrete
Bench Wood
Bench Wood Slats/Steel Pedestals
Bleachers Aluminum
Bleachers Wood
Wall and Counter Top
Plumbing Fixture
Ceramic Wall Tile
Cork
Countertop Plastic
Countertop Stainless
Cut/Point Painted Brick Wall
Cut/Point Painted Cmu Wall
Drywall
Glass Block Wall
Marble
Metal Wall
Metal Water Closet Stall
Refinish Interior Wood Trim
Refinish Wood Wainscot
Walls and Ceilings (Concrete/Dry Wall/Plaster)
Wood
Wood Water Closet Stall
Cabinets and Casework
Painted Brick Wall
Painted CMU Wall
Painted Terra Cotta Block Wall
Plaster
Structural Facing Tile
Vinyl Wall Covering
Wall Cabinets Metal
Wall Cabinets Wood
Wallpaper
Wardrobe Plastic Laminate
Water Closet Partition Marble
Water Closet Partition Painted Metal
Water Closet Partition Stainless Steel
Wood Paneling

Interior Doors
Water Closet Metal Door
Interior Metal Door
Interior Wood Door
Water Closet Wood Door
Interior Hollow Core Wood Door
Interior Metal Door
Interior Solid Core Wood Door

Stairways
Anti-Slip Abrasive Tread Tape
Brick Tread
Carpet
Clay/Quarry Tile Tread
Concrete Stair Tread Inserts
Metal Grate Tread
Concrete Stairs
Metal Pipe Rail
Metal Stair Railing
Metal Stairs
Wrought Iron Rail
Stain Wood Stair Rail
Stain Wood Stairs
Rubber Stair Nosing
Rubber/Vinyl Stair Tread
Steel Pipe Railing

Department of the Interior

Asset Components and Sub-Structure Factored into FCI Calculations

Stone Tread
Terrazzo Tread
Wood Railing
Wood Stair Tread
Wrought Iron Railing

Interior Floors
Aluminum Grating
Anti-Slip Tape
Carpet
Carpet Tile
Ceramic Tile
Cork
Epoxy Coat/Film to Concrete
Floor Mat In-Laid Black Rubber
Galvanized Steel Grating
Hardwood Strip
Marble Tile
Natural Clay/Quarry Tile
Concrete
Stone
Wood
Parquet
Rubber
Sealer/Hardener Silicone Base On Concrete
Sheet Vinyl
Slate Tile
Steel Decking
Steel Grating
Terrazzo
Vinyl
Wood Gym Floor
Wood Plank

Interior Ceilings
Blown-In Fiberglass Insulation
Finished Wood Strip
Hardboard Panels
Interior Ceiling Concrete/Drywall/Plaster
Interior Ceiling/Pipes/
Utilities/Girders
Metal Ceiling/Decking
Interior Wood
Plaster
Plywood
Rolled Batt Insulation
Sheetrock/Drywall
Sprayed Acoustical
Suspended Acoustic
Suspended Mineral Fiber

Conveying Systems
Belt Conveyor
Dumbwaiter
Escalator
Hydraulic Elevator
Traction Elevator

Plumbing
Air Compressor
Bathtub Enameled Steel
Bathtub Fiberglass
Bathtub PE on CI
Electric 80 - 2000 Gal Hot Water Generator
Electric to 50 Gallon Hot Water Generator
Faucet
Flush Valve
Garbage Disposal
Gas/Oil 50 to 70 Gal Hot Water Generator
Gas/Oil Commercial Hot Water Generator
Gas/Oil to 50 Gal Hot Water Generator
Heat Exchanger Shell/Tube Hot Water
Generator
Lavatory
Refrigerated
Service Sink
Shower Enameled Steel
Shower Fiberglass
Sink
Storage Tank Domestic Hot Water Hot
Water Generator
Tub/Shower Mixing Valve
Urinal
Vacuum Pump Motor
Vacuum Pump Single Stage Compressor
Vacuum Pump Unit

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Asset Components and Sub-Structure Factored into FCI Calculations

Wall Mounted Water Cooler
Water Closet

Heating
Burner Boilers
Burner Motor Boilers
Centrifugal Pump/ Motor Set Solar Energy
Circulating (Set)
Cooling Coil Air Handling Units
DX Heat Pump Air Handling Units
Electric Baseboard Radiant Heaters
Electric Boilers
Electric Furnaces
Electric Infrared Heaters
Electric Unit Heaters
Fan Coil Unit
Fan Motor
Fan Motor Air Handling Units
Fin Tube Steam/Hot Water Radiant Heaters
Fuel Oil Pump Boiler
Furnace Fan Motor
Gas Fired Infrared Heaters
Gas Fired Unit Heaters
Gas/Oil Fired Boilers
Gas/Oil Furnaces
Heating Coil Air Handling Units
Hot Water Steam Air Handling Units
Motor Circulating
Pump Seals
Pumphead (Excludes Motor) Circulating
Shell & Tube Heat Exchanger
Solar Panel
Solar Storage Tank
Steam/Hot Water Radiant Heaters
Steam/Hot Water Unit Heaters
Underground Fuel Oil Storage Unit Boilers

Cooling
Air Compressor
Air Compressor Motor
Air Conditioner Window Unit
Air Cooled Condenser Coil Rooftop Unit
Air Cooled Reciprocating Chiller
Air Cooled/Gas Fired Absorption Chiller
Burner Blower Absorption Chiller
Centrifugal Pump/Motor Set
Chemical Pumps
Circulating Motor
Circulating Pump
Circulating Pump Absorption Chiller
Compressor Reciprocating Chiller
Condenser Coil Reciprocating Chiller
Condenser Coil Split System
Condenser Fan Motor
Condenser Fan Motor Reciprocating Chiller
Cooling Coil Chilled Water
Cooling Coil DX
Direct Drive Air Cooled Condenser
DX Air Cooled Split System
DX Compressor
DX Compressor Rooftop Unit
DX Compressor Split System
DX Fan Motor Split System
DX Water/Glycol Cooled
Evaporative Condenser
Evaporative Cooler
Evaporator Fan Motor
Fan Coil Unit
Fan Motor
Fan Motor
Fan Motor Air Cooled Condenser
Fan Motor Cooling Tower
Fan Motor Rooftop Unit
Float Valve Cooling Tower
Fluid Cooler Circulating Pump Air Cooled Condenser
Forced Draft Cooling Tower
Gas Furnace in Rooftop Package Unit
Heating Coil Hot Water
Hot Water/Steam Heating Coil Rooftop Unit
Package Unit Free Standing Water Cooled
Package Unit Horizontal Self-Contained
Pump-Down Compressor Centrifugal Chiller
System (Control Panel Sensors Chemical Pumps
Water Cooled Absorption Chiller

Department of the Interior

Asset Components and Sub-Structure Factored into FCI Calculations

Water Cooled Condenser Rooftop Unit
Water Cooled Reciprocating Chiller

Ventilation
Fan Motor
Fan Roof/Wall Exhaust
Relief Ventilator

Extinguishing Systems
Air Compressor Dry Pipe/Deluge
Commercial Kitchen Hood Fire Extinguishing System
Compressed Gas Cylinder CO2
Dry Chemical Expellant Cylinder
Dry Pipe/Deluge
Trim Package and Retarding Valve
Wet Chemical Cylinder
Wet Pipe

Electrical – Service and Distribution
1 Pole Molded Case Circuit Breaker
2 Pole Molded Case Circuit Breaker
3 Pole Molded Case Circuit Breaker
3ASCR Overhead Service
600 Amp Fuses
8" X 8" Wireway
Building Structure Grounding
Dry Transformers
Electrical Metallic Tube Conduit
Electrical Service Grounding
Ground Rod
Lightning Protection Grounding
Liquid Filled Transformers
Motor Starter
Safety Switches
Service Entrance Cable
Switchboards

Electrical – Lighting and Power
Exit Light
Fluorescent Ballast Light Fixture
Fluorescent Interior Light Fixture
Incandescent Light Fixture
Metal Halide Ballast Light Fixture
Metal Halide Light Fixture
Quartz Light Fixture

Electrical – Special Systems
Alarm Bell
Annunciator Panel
Battery Charger Generator Set
Coil Transfer Switch
Control Panel
Generator Sets
Heat Detector
Pull Station
Smoke Detector
Transfer Switch
UPS Battery Generator Set

Institutional Equipment
Condenser/Evaporative Fan Motor
Evaporative Unit
Remote Condenser Unit

Interior Swimming Pools
Chlorinators
Controls
Motors
Piping and Fittings
Pumps
Surface – Concrete
Surface – Fiberglass
Surface – Gunite
Surface - Metal
Surface – Tile
Surface – Vinyl
Underwater Lights
Valves
Water Filters
Water Heaters

Water Supply
Controls
Hydrants
Manholes

Department of the Interior

Asset Components and Sub-Structure Factored into FCI Calculations

Mechanical Equipment
Meters
Motors
Piping and Fittings
Pumps
Tanks - Concrete
Tanks - Metal
Valve Boxes - CMU
Valve Boxes - Concrete
Valve Boxes - Steel
Valves

Other Systems Related to Water Supply
Fencing/Gates - Concrete
Fencing/Gates - Masonry/Stone
Fencing/Gates - Metal
Fencing/Gates - Wood
Generator Sets
Signage - Concrete
Signage - Masonry/Stone
Signage - Metal
Signage - Wood

Waste Water System
Aeration Tank - Concrete
Aeration Tank - Metal
Air Compressors - Reciprocating
Clarifier Tank - Concrete
Clarifier Tank - Metal
Contact Tank - Concrete
Contact Tank - Metal
Controls
Disinfectant Injection System
Dry Well - Concrete
Dry Well - Metal
Manholes/Cleanouts
Mechanical Equipment
Motors
Piping and Fittings
Pumps
Sewage Ejectors
Tanks - Sewage Collection
Wet Well - Concrete
Wet Well - Metal

Other Systems Related to Waste Water
Fencing/Gates - Concrete
Fencing/Gates - Masonry/Stone
Fencing/Gates - Metal
Fencing/Gates - Wood
Generator Sets
Signage - Concrete
Signage - Masonry/Stone
Signage - Metal
Signage - Wood

Site Electrical Utilities
Air Terminals
Anchors and Guy Wires
Battery (Lead Acid)
Battery (Nickel Alloy)
Bonding
Circuit Breakers
Communication – Annuniciator/Transmitter
Communication – Remote Units
Conductors (Bare)
Conduit Systems
Disconnect Switches
Enclosures with Bus Bars
Generator Set Battery Charger
Generator Sets
Handholes
Insulators
Lighting Controllers
Lighting Fixtures
Manholes
Meters
Motor Starters/Contactors
Poles: Wood Steel Aluminum Concrete and Fiberglass
Power Regulators
Security - Alarm Devices
Security - Controller/Processor
Security - Entry Access Control
Security - Entry Sensors
Security - Motion Sensors

Department of the Interior

Asset Components and Sub-Structure Factored into FCI Calculations

Security - TV Monitors/Cameras
Steel Lattice Towers
Surge (Lightning) Arresters
Transfer Switches
Transformers
Underground Electrical Utilities

Other Systems Related to Site Electrical Utilities
Fencing/Gates - Concrete
Fencing/Gates - Masonry/Stone
Fencing/Gates - Metal
Fencing/Gates - Wood
Foundations
Signage – Concrete
Signage – Masonry/Stone
Signage – Metal
Signage - Wood

Irrigation

Primary Diversion, Primary Conveyance
Headworks
Main Canals

Secondary Irrigation Structures and Secondary Conveyance
Chutes
Drops
Flumes
Laterals
Pipes
Pumps
Siphons

Flow Regulation, Resource Protection
Lateral Diversion, Flow Measurement
Headgates
Weirs

Farm Delivery
Turnouts

Dams
Control house, gates
Dam Structure (Earth Embankments, Concretes, etc.)
Electrical Generation
Outlet works
Riprap, embankment protection
Spillways, gates, fuseplugs
Toe drains

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Acceptable/Unacceptable. An acceptable level of condition for an asset is when all of an asset's critical systems deferred maintenance deficiencies rated critical or serious have zero deferred maintenance; non-critical systems deferred maintenance will still exist. Acceptable condition may vary by asset type. An unacceptable level of condition for an asset is when an asset's critical systems have deferred maintenance deficiencies rated critical or serious. The threshold used to determine acceptable and unacceptable will vary based on the mission and type of asset.

Archaeological Resource Protection Act (ARPA). ARPA (16 U.S.C. 470aa-470mm; Public Law 96-95 and amendments to it) was enacted to secure, for the present and future benefit of the American people, the protection of archaeological resources and sites which are on public lands and Indian lands, and to foster increased cooperation and exchange of information between governmental authorities, the professional archaeological community, and private individuals (Sec. 2(4)(b)). The primary impetus behind ARPA was the need to provide more effective law enforcement to protect public archeological sites.

Assets. Assets refer to Federal real property assets only. Federal real property is defined as any real property owned, leased, or otherwise managed by the Federal Government, both within and outside the United States, and improvements on Federal lands.

Asset Management. A systematic process of maintaining, upgrading, and operating physical assets cost-effectively. It combines engineering principles with sound business practices and economic theory, and it provides tools to facilitate a more organized logical approach to decision making, providing a framework for handling both short- and long-term planning.

Asset Management Plan (AMP). A documented plan of business to promote a proactive management approach to effectively address and articulate the requirements for effectively managing a portfolio of assets.

Asset Priority Index (API). An asset evaluation process that quantifies the value of an asset in relation to the mission of the Bureau or Office. The API ranks assets according to rating system.

Asset Priority Index/Facility Condition Index Analysis. The use of API and FCI in order to help managers focus attention on the importance of an asset to the mission and the state of its condition, providing information that leads to improved investments of scarce resources.

Capital Improvements (Alterations) – Changes to the interior arrangements or other physical characteristics of an existing facility or installed equipment so that it can be used more effectively for its currently designated purpose or adapted to a new use. Alterations may include work referred to as improvement, conversion, remodeling, and modernization. Such alterations are not maintenance.

Class "C" Estimate. It is defined as being within -15 to +25 percent of project cost. The Department will use this range, in conjunction with the methodology provided in this policy, to create the CRV and DM estimates.

Department of the Interior

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Component Renewal (CR). Also known as Recapitalization. The planned replacement of a component or system that will reach the end of its useful life based on condition and life cycle analysis within the facility's lifetime. Examples of component renewals include roof systems utility components, pavement, and other major dynamic equipment.

Condition Assessment. The inspection and documentation of the condition of the features of an asset as measured against the applicable maintenance or condition standards. It provides the basis for long-range maintenance planning, as well as annual work plans and budgets.

Constructed Asset. Term used to describe a real property asset that was constructed on the land and owned by DOI, such as a building, house, shed, structure, etc., as opposed to a real property asset that is leased.

Cost Estimate. An estimate, developed in dollars, of the cost to repair or replace an asset component or an entire asset that uses standard industry estimating tools, unit costs, and methodology.

Cost Model. A cost model is a set of mathematical relationships arranged in a systematic sequence to formulate a cost methodology in which outputs, namely cost estimates, are derived from inputs. These inputs include quantities and prices. Cost models can vary from a simple one-formula model to an extremely complex model that involves hundreds or even thousands of calculations. The consistency of response inherent in cost models enables the comparisons among alternatives. Identical inputs are treated alike and that the differences in cost estimates (outputs) are based on differences in inputs. The ability to compare on a consistent basis is one of the most attractive features of cost models. However, the outputs are only as good as the assumptions of the model and the input data permit.

Current Replacement Value (CRV) – CRV is used to calculate FCI. It is a standard industry cost estimate of materials, supplies, and labor required to replace facility at existing size and functional capability. This cost includes current direct cost for planning/design, construction, and construction management. Indirect costs, which include salaries and benefits for government employees, are covered by annual appropriations and will not be added to estimated costs for CRV. CRV is the same as Functional Replacement Value (FRV) for non-heritage assets.

Deferred Maintenance (DM). DM is maintenance that was not performed when it should have been or which was scheduled and was, therefore, put off or delayed for a future period.[22] DM is comprised of existing maintenance repairs and required replacements (component renewal), not accomplished when they should have been, not funded in the current fiscal year or otherwise delayed to the future. It is typically identified by a comprehensive facilities condition assessment/audit of buildings, grounds, fixed equipment and infrastructure. These needs have not been scheduled to be accomplished in the current budget cycle. Therefore, these needs are postponed until future funding budget cycles. The projects have received a lower priority status than those to be completed in the current budget cycle. Indirect costs, which include salaries

[22] Statement of Federal Financial Accounting Standards (SSFAS No. 6) definition.

and benefits for government employees are covered by annual appropriations and will not be added to estimated costs for DM, nor will they be included in the numbers reported to the Department for the annual DM display in the Department's financial statement or any bureau financial statement.

Deferred Maintenance and Construction 5-Year Plan. These plans, prepared annually by each bureau, are the prioritized lists of deferred maintenance and construction projects, reviewed and approved by the bureau investment boards and bureau head, for maintenance and construction budget line items over a five-year period. The annual update presents the opportunity for the bureaus to adjust their project priorities based on newly identified needs or previously identified needs that have become critical during the past year.

Deficiency. A facilities defect that occurs because of normal deterioration or as the result of nature/external forces impacting the condition of the facility, or when maintenance and repair tasks are not performed in a timely manner. Deficiencies may not have immediately observable physical consequences, but when allowed to accumulate uncorrected, they inevitably lead to deterioration of performance, loss of asset value, or both. An accumulation of such uncorrected deficiency is a backlog that represents a liability (in both physical and financial terms) for an asset.

Disposition. Disposition generally means removing an asset from the portfolio. This connotes some action that was taken, such as:

- Transfer;
- Sale;
- Abandonment, Destruction, or Donation;
- Off-Site Removal;
- Demolition;
- Deconstruction;
- Exit of Commercial Lease Agreement; and
- Redefine Asset Mission.

"Disposition," as used in the Federal Real Property Council disposition algorithm, means the outcome of the diagnostic process supported by the FRPP Performance Assessment Tool (PAT). Thus, when an agency's portfolio is taken through the FRPP PAT, assets in the portfolio will be evaluated using the FRPC performance metrics of mission dependency, condition index, utilization and operating costs.

Facility Utilization Index (FUI). The FUI is a first-tier performance metric for assets established by the Federal Real Property Council. The FUI tracks the percent of office space occupied versus the design amount. The vacancy rate derived from this calculation is tracked on an asset level and used as a part of an agency's annual performance measures.

Facility Condition Index (FCI). The Facility Condition Index (FCI) is an industry standard for representing the general condition of a constructed facility and for making comparisons among facilities of similar type at a particular point in time. The Federal Government

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employs FCI as a performance measurement tool in the Federal Real Property Profile. The FCI estimates are based upon condition assessments and Class C cost estimates. The FCI rating is a ratio of the cost of repair of an asset's deficiencies (deferred maintenance, recurring maintenance that has been deferred, component renewal that has been deferred) divided by the current replacement value for the asset. Without exception, the resultant value for FCI will be between not less than 0 and no greater than1.0. For example, a building with a current replacement value of $10 million and deferred maintenance of $1.2 million would have an FCI of .12 ($1.2 million divided by $10 million).

Facility Maintenance Management System (FMMS). The FMMS is an electronic system for planning and tracking facilities management, with baseline information on facility conditions. It is used in part to list maintenance needs, assign repair work, and identify completed maintenance projects.

Federal Real Property Profile – Internet Application (FRPP). The FRPP is the "single, comprehensive, and descriptive database of all real property under the custody and control of all executive branch agencies, except when otherwise required for reasons of national security," in accordance with Executive Order 13327. It is an automated system under the purview of GSA that is used to capture and report on the FRPC-defined 24 mandatory data elements for each individual real property asset owned by the executive agencies of the Federal government. The FRPP contains 20 static data elements and 4 performance metric data elements.

Financial and Business Management System (FBMS). The FBMS is an electronic major enterprise management initiative to integrate financial management, procurement, property management and other subsidiary systems and revamp administrative processes throughout the Interior Department. The FBMS will provide the system and process structure for the Department to modernize its operations. This financial and business management system will provide complete, accurate and timely information on financial activities, including budget execution, acquisition, grants, property management, core accounting, and performance that will enable Interior's employees and managers to make better informed decisions about their programs.

Heritage Assets. Property, plant and equipment that possesses one or more of the following characteristics: (1) historical or natural significance; (2) cultural, educational or aesthetic value; or (3) significant architectural characteristics. Heritage assets include assets that are National Historic Landmarks, listed in the National Registry of Historic Places (NRHP), or eligible for listing in the NRHP.

Industry Standard Cost Databases. Tools used to aid managers estimate current replacement value (CRV) and deferred costs. Such databases include, but are not limited to, Building News-Record, Craftsman Book Company, Richardson General Construction Estimating Standards, R.S. Means, and Whitestone Research.

Lifecycle Asset Management. Systematic process of maintaining, upgrading, and operating physical assets cost effectively. It combines engineering principles with sound business practices and economic theory, and it provides tools to facilitate a more organized, logical

approach to decision-making. In the broadest sense, life-cycle asset management is a strategic approach to managing physical infrastructure.

Multi-Use Assets. Assets that meet the definition of a Heritage Asset and that currently have a predominant use that could be accomplished by a non-heritage asset. An example is a historic building that is serving as a visitor center or an office. In this example, the predominant use of the heritage asset is as a visitor center or office, which could be accomplished in a non-heritage asset as well.

National Historic Preservation Act (NHPA). NHPA requires Federal agencies to take into account the effects of their actions and programs ("undertakings") on historic properties such as buildings, structures, archaeological sites and other places. The law is intended to avoid unnecessary adverse effects on important historic properties such as buildings, archaeological sites, and other places. Enacted in response to severe disruption of central cities that was caused by Urban Renewal programs of the 1950's and early 1960's, the Act created the executive-level Advisory Council on Historic Preservation ("Council") and chartered the Council to review national historic preservation policies and develop uniform regulations and procedures to carry out the Act.

The Council also is required to review, resolve disputes about, and comment on the effects of specific agency undertakings on historic properties. In addition to the Council, the Act created state- and tribal-level government offices to review Federal agency undertakings; the chief officer is designated "State (or Tribal) Historic Preservation Officer" ("SHPO" or "THPO"). The SHPOs or TRPOs administer funds provided for operation of their offices under the authority of the NHPA.

Performance Metrics. A performance metric is a standard used to evaluate and communicate performance against expected results. Performance metrics are designed to gauge progress toward effective implementation of the organization's strategy and track achievement of organizational objectives, which are aligned with the strategy. Below are the four performance metrics tracked through the FRPP also referred to as first-tier metrics by the Federal Real Property Council.

FRPP Terms and Acronyms	Related DOI Terms and Acronyms
Mission Dependency (MDI)	Asset Priority Index (API)
Condition Index (CI)	Facility Condition Index (FCI)
Annual Operating Costs	Annual Operating and Maintenance Costs (O&M)
Utilization (FUI)	Utilization

These first-tier metrics are reported into the FRPP by all Federal agencies. Second-tier metrics are agency-level based measures to be used in conjunction with the first-tier metrics to measure asset performance (see Appendix 5 for types of second-tier metrics).

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Preserve America, Executive Order 13287. The EO directs Federal agencies to take the lead in identifying, preserving, and creating beneficial use of historic properties in order to contribute to the economic vitality of the Nation's communities. It also directs each agency with historic properties to manage them as assets that can support department and agency missions and to assess and evaluate the suitability of the agency's types of historic properties to contribute to community economic development initiatives, including heritage tourism, taking into account agency mission needs, public access considerations, and the long-term preservation of the assets.

Preventive Maintenance (PM). PM consists of scheduled servicing, repairs, inspections, adjustments, and replacement of parts that result in fewer breakdowns and fewer premature replacements and achieve the expected life of facilities and equipment. These activities are conducted with a frequency of 1 year or less.

Real Property. Real property is defined as any real property owned, leased, or otherwise managed by the Federal Government, both within and outside the United States, and improvements on Federal lands. For the purpose of EO 13327, Federal real property shall exclude: interests in real property assets that have been disposed of for public benefit purposes pursuant to section 484 of title 40, United States Code, and are now held in private ownership; land easements or rights-of-way held by the Federal Government; public domain land (including lands withdrawn for military purposes) or land reserved or dedicated for national forest, national park, or national wildlife refuge purposes except for improvements on those lands; land held in trust or restricted fee status for individual Indians or Indian tribes; and land and interests in land that are withheld from the scope of this order by agency heads for reasons of national security, foreign policy, or public safety.

Recurring Maintenance (RM) (Cyclic in Nature). Work activities that recur based on normal wear patterns on a periodic cycle of greater than one year and less than 10 years. Typical work Includes: painting, caulking, sealing, and carpet replacement. A few RM activities may have cycles greater than 10 years, such as repointing of bricks.

Rehabilitation. Rehabilitation is the act or process of making possible a compatible use for a property through repair, alterations, and additions while preserving those portions or features which convey its historical, cultural, or architectural values. Rehabilitation of historic buildings and structures should be conducted according to the Secretary of the Interior's Standards for the Treatment of Historic Properties.

Replacement-in-Kind. Replacement of an existing asset with one that has the same size and functionality or replacement of existing material on historic properties that is constructed, manufactured, and installed in the same manner and with something equal in substance having a similar or identical effect.

Repair(s). The restoration of a facility or component thereof to such condition that it may be effectively utilized for its designated purposes by overhaul, reprocessing, or

replacement of constituent parts or materials that have deteriorated by action of the elements or usage and have not been corrected through maintenance. Also includes work that is performed to return equipment to service after a failure, or to make its operation more efficient.

Site-Specific Asset Business Plan (ABP). A documented plan of business to promote a proactive management approach to effectively address and articulate the life-cycle issues and characteristics of a site's asset portfolio, which covers all assets reported to the FRPP and all GSA assigned facilities. An ABP provides facility and regional managers with a micro-level view of a site's assets. The ABP projects a 5 to 10-year snapshot of the assets using the performance metrics of the Asset Priority Index (API), the Facility Condition Index (FCI), Facility Utilization Index (FUI), and Operations and Maintenance (O&M) costs to help make informed investment decisions that drive budget distribution.

Utilization. The extent to which an asset is utilized relative to its ultimate capacity, i.e., the rate of utilization. The utilization rate is a performance measurement that is required input to the FRPP for real property assets defined as office, hospitals, warehouses, laboratories, and housing.

Appendix 4

Overview of Condition Assessments in the Department of the Interior

DOI has developed, is using, and continues to refine asset condition assessment processes that rigorously support the best possible investment strategy for improving and maintaining bureau portfolios. The condition assessments identify and validate the condition of facilities and result in the identification of maintenance requirements. This tool or process assists managers in establishing maintenance schedules, estimating budgetary requirements for recurring maintenance, component renewal and deferred maintenance.

The condition assessments create the ability to plan, schedule and conduct maintenance and to properly define the scope and cost of repair, improvement, replacement, operations, recurring and preventive maintenance (condition assessments should ideally be conducted as an integral part of preventive maintenance activities) and component renewal activities in the future.

Condition assessments begin with verification and existence of the asset and then proceed to examination of its condition. There are two required types of condition assessments; Annual and Comprehensive, with the preponderance of assets examined during the Annual Condition Assessments.

a. Annual Condition Assessments

Annual Condition Assessments are conducted on all DOI-owned constructed assets with a CRV over $5,000. The goal of an annual assessment is to verify existence and update documentation of maintenance needs and accomplishments in FMMS. Bureaus and their constituent Field Operating Units will determine the Annual Condition Assessment schedules, so that all respective assets get their required assessment. This assessment can result in updating work orders and costing information derived during the comprehensive condition assessment. It is important to set up quality assurance/quality control processes to avoid duplication of cost data and work orders.

b. Comprehensive Condition Assessments

Comprehensive Condition Assessments are conducted at least every five years on DOI-owned constructed assets with a CRV over $50,000. Inspection findings will be integrated into the FMMS to ensure that required corrective actions are included in budget requests as appropriate. At the end of FY 2006, this program concluded its fifth year of a Five-Year program to assess all constructed assets with CRV over $50,000.

Different types of assets require different frequencies of comprehensive assessment inspections as required by public law or regulations. For example, all public bridges, BIA schools, and BOR dams and power generation facilities are required by public law, regulation or policy to conduct comprehensive condition assessments more frequently than the DOI standard of every five years. Bureau-level asset management plans will define the specific condition assessment schedules by asset type.

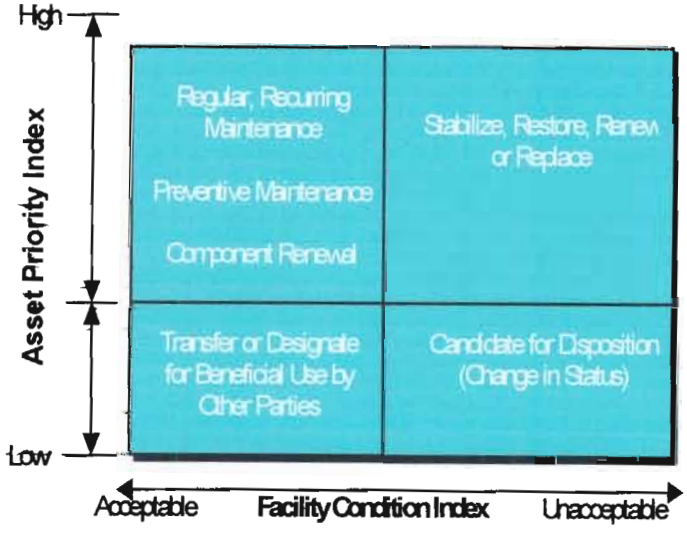
Comprehensive condition assessments may include examination of assets for issues related to non-functioning building components and equipment, accessibility, deferred maintenance, historic preservation, fire, energy conservation, environmental code and life safety code compliance. The desired outcome for the condition assessment program is to facilitate integrated, collaborative data collection that provides information on all necessary facets of asset management requirements.

Appendix 5

Overview of the DOI FCI/API Analysis

The move to incorporate API into the Department's life cycle and portfolio-based approach ensures that the highest priority mission critical assets are incorporated into the five-year plans. This system will maximize spending upon bureau mission critical assets at the most important periods in the assets life cycle. Under this procedure, bureaus will first sort assets into four categories, high API/acceptable FCI, high API/unacceptable FCI, low API/acceptable FCI, and low API/unacceptable FCI:

- Assets with high API and acceptable FCI should be maintained with practices that protect the government's investment;
- Assets with high API and unacceptable FCI should be considered for stabilization, restoration, rehabilitation and repair. The asset can be replaced if the asset's FCI is in unacceptable condition. However, if the FCI is high principally because of its historical significance repair and rehab activities will be the priority;
- Assets with low API and acceptable FCI should be considered candidates for transfer or beneficial use by other parties; and
- Assets with low API and unacceptable FCI should be considered for disposal.



Managers of owned assets would use the API and the FCI to help make resource allocation decisions (see the adjacent diagram). For GSA or leased space, managers would use API in conjunction with other metrics such as utilization and/or cost per square foot to ensure that non-owned assets are being utilized effectively.

FCI and API will be used to prioritize projects for inclusion in DOI's Five-Year Deferred Maintenance and Construction Plan. This will accomplish the following:

- Assist in directing resources where they are needed most, based on mission need and strategic goals;
- Assist in identifying lower priority assets that should be considered for excess if they no longer support the DOI mission;

Overview of the DOI FCI/API Analysis

- Effectively manage the life-cycle of every asset;
- Assist in maturing the Department's focus from project formulation and execution to one of life-cycle asset management where the planning focus is not about projects and project funding, but rather the effect the project will have on the asset throughout its life-cycle; and
- Adopt and utilize other performance measures that will enhance the Department's ability to predict future management of the asset portfolio, e.g., component renewal index (CRI) and/or dollar per square foot ($/SF) for operations and maintenance.

The application of FCI and API along with other metrics will enable a site to prioritize deferred maintenance projects and ensure that scarce funds are invested in the most important or mission critical assets at the site.

Appendix 6

Second-Tier Metrics

System Criticality

System Criticality is a methodology used in determining acceptable levels of condition and therefore, acceptable facility condition index (FCI) levels based on deferred maintenance associated with an asset's critical systems. System criticality is applicable to all asset types. Varying methods of identifying and defining system criticality can be employed; the emphasis is that all deferred maintenance is not the same. For example, a building's roof (a critical system) could have leaks that, if not repaired, will damage the interior systems of the asset. The roof leak should be repaired prior to consideration of any interior repairs. Another example would be where spillway gates on a dam have deteriorated to the point where reliable operation is not assured. The cost of the repair may not indicate a significant change in the FCI, but could have significant consequences in not allowing flood discharges to pass and thus subjecting the dam to possible overtopping/failure of the dam, if the gates are not repaired.

Dams

In addition to overall facility condition, the Department of the Interior uses other performance metrics for measuring the condition of dams, power plants, and irrigation and drainage systems. One example is the Technical Priority Rating (TPR). The TPR is based on the technical condition of the dam, as determined by a physical inspection of the dam, analysis of the inspection report, flood hydrology, seismic and other data. Several bureaus use this metric for condition, ranking and funding decisions. The Bureau of Reclamation (BOR) has been using a risk-based approach for the ranking of its dams. The Department's Working Group on Dam Safety and Security is reviewing the risk-based metric to determine if the risk-based approach would be applicable to all DOI bureaus. Currently, the BOR and Bureau of Indian Affairs use the Facility Reliability Rating (FRR) performance measure to determine the reliability of their dams.

The FRR uses a scoring system that considers maintenance and other criteria, such as operational and management factors. This performance measure, if properly weighted in its scoring criteria, can serve as a meaningful indicator of these assets' continued reliability. It can also serve as a meaningful management tool in determining where applicable increases in staffing or budgeting resources may be warranted to improve a particular asset's reliability condition (including major rehabilitation or replacement), or to justify its disposal or decommissioning. The use of the FRR on these types of assets does not preclude the FRPP requirement to compute a separate CI value (condition index) for these assets.

Appendix 7

Overview of the Department's Single Platform Facility Maintenance Management System (FMMS)

The Department of the Interior (DOI) will combine MAXIMO™ database applications from the multiple bureau instances into a single platform MAXIMO™ application designated the Facility Maintenance Management System (FMMS), or Single Platform MAXIMO™ (SPM). This application will have the following features:

- Single data warehouse;
- Single location, centrally managed, application server and configuration, hosted by the National Business Center;
- Version 6.0 (or higher) of MAXIMO™;
- Fully Certified and Accredited;
- Single interface to the Financial and Business Management System (FBMS);
- Each bureau will be a separate organization as defined in MAXIMO™ application logic; and
- Implementation of a Departmental standard Configuration Management process.

The FMMS must provide an efficient and effective mechanism for meeting both central office reporting requirements and end user business needs. Within that framework, requirements and objectives for the FMMS are described as follows:

- Single interface with the system of record, FBMS;
- Standardized business processes;
- Standardized data collection, interpretation and format;
- Standardized report formats and enhanced reporting capabilities;
- Common (MAXIMO™ system) user interface, methodology and procedures;
- Provide a reliable and functional system at the lowest possible cost;
- Provide accurate data in support of investment decisions;
- Provide accurate inventory data of real property and other facility management information as required to support the Financial Business Management System (FBMS), which will be the official system of record. An interface with MAXIMO™ will allow data to be exchanged between the two systems in support of property inventory and maintenance activities by each bureau;
- Manage asset condition assessment scheduling and results; and
- Provide underlying data needed to develop Five-Year Deferred Maintenance and Five-Year Capital Improvement Plans.

The FMMS is the cornerstone tool for implementing the DOI and Bureau Asset Management Plans (AMP) and Site Specific Asset Business Plans. The recently completed AMP describes a comprehensive strategy for managing DOI assets.

Core functions of FMMS are:

1) The ability to capture cost of current and deferred maintenance as well as capital improvement costs for all constructed assets and relate them back to unique asset numbers assigned from FBMS. Each work order upon completion will contain materials, contract, and burdened labor costs to enable capture of the full costs of activities. This capability will allow the DOI, Bureau and Field Sites to develop asset-based maintenance histories on all constructed assets.

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2) The ability to record the complete history of maintenance and capital improvement activities accumulated over time for each individual constructed asset to enable documentation of full life-cycle costs.
3) The ability to capture individual components of constructed assets identified in FMMS so that component renewal costs can be planned and monitored.
4) Record maintenance deficiencies identified through condition assessments in FMMS in the form of work orders. Scheduling of condition assessments may also be accommodated within the FMMS.
5) Calculate the Facility Condition Index for individual constructed assets through comparison of Deferred Maintenance Costs with Current Replacement Values.
6) Accumulate Deferred Maintenance and Capital Improvement needs information in such a way as to allow preparation of Five-Year Deferred Maintenance Plans and Five-Year Construction Plans as required by attachment G of the DOI budget guidance.
7) Provide Five-Year Plan Completion Reports as required by attachment G to DOI budget guidance.
8) Report all required data elements for DOI owned buildings and structures portion of the government-wide Federal Real Property Profile to FBMS. The FBMS is the system of record for completing this report; however, some of the data elements likely will be drawn from FMMS.
9) Provide a mechanism for storing linked or attached documents such as drawings, technical specifications, photos, inspection reports, etc.
10) Provide a mechanism to store job plans and associated materials needed to implement a preventative maintenance program.
11) Provide data standardization to assist in the utility of FMMS and, to the extent feasible, data sharing (e.g., job plans, standardized definitions, value lists, and business processes associated with the data standardization).
12) Ensure the use of the Standard DOI Asset List and the standard definitions and codes for Work Types and Work Status.
13) Provide standard DOI software to supplement the Actuate software built into the standard MAXIMO™ product. The ability to generate reports from within as well as outside the MAXIMO™ application is required.
14) Explore a GIS linking capability to enable mapping of the physical location of assets (Only if this function is not provided in FBMS).
15) Provide a Cost Estimating linking capability.
16) Provide the ability to input data from portable hand-held devices used as a mechanism to enhance field deployment.
17) Provide the optional capability to capture time and attendance information using FMMS or a bolt-on application (e.g., Quicktime).

<u>Bureau functions of FMMS are:</u>

1) Individual bureaus will refine business processes and maintain a close connection with the software users. FMMS will involve standard business practices to the maximum extent possible but flexibility may be granted through the Configuration Management process to allow bureaus to effectively fulfill mission requirements.
2) Provide training programs tailored to individual bureau needs.

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3) Provide analysts to work with users to assure that budget, planning, and performance goals can be effectively managed within the FMMS database.
4) Provide system administrators, which include user access security.
5) Provide report writers.
6) Provide any report servers that are needed, at whatever locations, and establish a standard report library.
7) Provide adequate Internet connectivity to geographically dispersed field stations that are often remotely located and lack high-speed Internet capabilities.

The actual requirements, roles and responsibilities of DOI, bureau, and end users will be clarified through the establishment of a Service Level Agreement between all parties involved in the use or maintenance of the FMMS.

Frequently Asked Questions

1. What asset management issues are unique to heritage assets (vs. non-heritage assets), and who should be involved in resolving them? Heritage assets, like non-heritage assets, possess management needs that are similar to other agency Property, Plant, and Equipment (e.g., deferred maintenance). However, because of their unique historical characteristics, once a management issue is identified, it cannot be handled following non-heritage asset methods. The asset manager must reach out to the agency cultural resource experts who can assist in determining the best management solution (e.g., use of historical building materials to maintain the historic integrity of the asset).

Heritage assets by definition represent a blending of needs, some unique and others very similar to those facing other Property, Plant, and Equipment. It follows that a connection must also therefore exist between those individuals charged with maintaining these assets.

2. What process is used for resolving heritage asset management issues? Once contacted the cultural resource expert can suggest a course of action. This could entail such things as conducting a condition assessment for the specific heritage asset or assistance in identifying a vendor for historically accurate materials. The asset manager would then proceed with the maintenance action following these recommendations.

3. How is deferred maintenance calculated for heritage assets? Deferred maintenance for heritage assets is calculated in the same manner as that for regular agency Property, Plant, and Equipment; however, for heritage assets replacement-in-kind must be considered, and other factors that may be unique to a building or structure that is historic in nature. As a result, standard industry maintenance/construction manuals may not provide the truest source for identifying deferred maintenance costs, and other sources or assets specific inspection and calculation should be considered.

4. What is the value of my asset portfolio? The value of your portfolio can be determined by totaling the Current Replacement Value (CRV) for all the assets. CRV is the standard industry costs and engineering estimates of materials, supplies, and labor required to replace facility at existing size and functional capability. This cost includes current costs for planning/design, construction, and construction management.

5. Is the CRV the same as the actual replacement cost for an asset? No, the Current Replacement Value (CRV) is most often a "Class C" cost estimate. This estimate is not based on design, drawings and technical specifications. It is often based on unit or square foot costs and is used in calculating the Facility Condition Index (FCI) for an asset. It is an approximation based on the square-foot costs of similar construction. It does not include the cost of support utilities and structures, such as water and electrical utilities or sidewalks and conduits.

6. If an asset component is due to be replaced, but has no deficiencies, is it considered deferred maintenance (DM)? No, if the component has no deficiencies, it is not considered deferred.

7. Are code compliance deficiencies factored into the calculation of deferred maintenance (DM) and Current Replacement Value (CRV)? When estimating CRV and DM, assume that code compliant materials and systems will be used to replace the existing asset.

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For example, a lead pipe in an existing building would be included in a CRV estimate as a copper pipe or some other code compliant pipe.

8. How can the FCI be used with the API to help a manager make a better business decision? The Facility Condition Index (FCI) provides a manager with a measure of a facility's relative condition at a particular point in time compared to similar facilities. FCI is be used with other metrics, most commonly the Asset Priority Index (API), which rates each existing or proposed owned and leased asset in the inventory based on its importance in carrying out the bureau's mission and achieving strategic goals. The FCI/API Analysis described in Appendix 6 of this Guidance provides a useful tool for managers. However, for some categories of assets, second-tier metrics can be effective indicators of the overall reliability of this asset type. Please refer to Appendix 5 concerning these second-tier metrics.

9. When should the CRV cost be re-estimated? The CRV cost should be re-estimated when there is a significant change in the value of an asset, i.e., increase in the square footage such as an addition of a gymnasium to school, additional miles to a road, etc.

10. Can a global inflationary factor be applied to all CRVs for existing assets? CRV and DM estimates will be adjusted for inflation each year by applying the appropriate RS Means three-digit weighted average zip code adjustment factor. The most recently published annual national index value will be used. The adjustment will be completed by April 1 each year.

11. What is the condition of my asset portfolio? The relative condition of owned assets is measured using the Facility Condition Index (FCI), which is an accepted industry metric for determining the condition of assets.

12. Which assets are the highest priorities in terms of your organization's mission and where should your bureaus focus limited resources? To assist you and your organization determine highest priority you should the Asset Priority Index (API). Guidance on API can be found in the Asset Priority Index Guidance, issued in September, 2005. The Guidance establishes the standard for developing an API framework, determining an API score, interpreting an API score and validating scores.

To supplement the use of this metric, the application of the other first-tier metrics and appropriate second tier metrics should be considered.

13. Why is asset prioritization important? One of the benefits of life cycle business practices is to be able to articulate and make the case for smarter investment decisions. One simple way to do that is to use the Asset Priority Index (API). Use of the API in prioritizing spending decisions helps managers identify the most important assets, and provides a logical continuum with which to direct limited funding.

14. How does a manager identify potential asset disposal candidates? As noted in the Department of the Interior's Disposition Policy for Real Property (Chapter 2 on Planning for Disposition of Real Property Assets), managers are to continuously assess the need for and condition of assets throughout their life-cycle basically following the following process.

- Conduct condition assessments (as described in Appendix 4 of this Guidance) updating information in the Facility Maintenance Management Systems (FMMS) on the utilization,

Frequently Asked Questions

- annual operating costs, FCI, and API. This will provide information to alert managers that an asset may be a candidate for disposition, replacement, or upgrade.

- Combine input from condition assessments with a sound methodology and analysis. Bureau portfolio-level analysis relies on the API and FCI. Assets with low API (not Mission Dependent or Mission Dependent Not Critical) and a high FCI (unacceptable condition) are considered to be prime candidates for disposition.

- Use the API and FCI analysis to identify potential candidates and exclude incorrectly identified assets as candidates for disposition.

- As a follow-up to the API/FCI assessment, bureaus/offices are responsible for determining what assets are eligible for disposition, using the Federal Real Property Profile Performance Assessment Tool [23] and other management tools and processes. The FRPC Performance Measurement Committee developed the criteria for the disposition decision model, utilizing inventory and performance measure data to better target assets for disposal, investment, or other management attention.

[23] To use the Federal Real Property Profile Performance Assessment Tool, Bureaus/Offices are responsible for ensuring that they have accurately compiled the asset performance measures of API, FCI, utilization and operation and maintenance costs and other required data elements, as specified in the FRPP.

Appendix 9

Formula for Inflating Cost to Present Year Dollars

Cost incurred in one year (original cost year) can be inflated to a target year cost by using the below formula.

Inflated Cost =

$$\frac{\text{Construction Cost Index Value for Target Year Cost}}{\text{Construction Cost Index Value for Original Cost Year}} \times \text{Original Acquisition Cost}$$

Appendix 10

References

- Federal Facilities Council (1998) Stewardship of Federal Facilities: A Proactive Strategy for Managing the Nation's Public Assets.

- Federal Facilities Council (2001) Deferred Maintenance Reporting for Federal Facilities: Meeting the Requirements of Federal Accounting Standards Advisory Board Standard Number 6, as amended.

- Asset Lifecycle Model for Total Cost of Ownership Management (2002) Framework, Glossary & Definitions: A Framework for Facilities Lifecycle Cost Management. Prepared by a Committee of representatives of the National Association of State Facilities Administrators, the Association of Higher Education Facilities Officers/APPA, the Federal Facilities Council, the International Facility Management Association, Holder Construction Company and Infrastructure Strategies.

- Federal Facilities Council (2004) Investment in Federal Facilities: Asset Management Strategies for the 21st Century.

- Federal Facilities Council (2005) Key Performance Indicators for Federal Facilities Portfolios: Federal Facilities Council Technical Report Number 147.

- Federal Real Property Council Real Property Inventory - User Guidance for FY 2007 Reporting.

- RS Means Suite of Estimating Tools.