Aerial photograph from the north of the Mark O. Hatfield Clinical Research Center (Building 10) on the National Institutes of Health Bethesda, Maryland campus

# Federal Best Practices in Real Property Investment Decision Making

## Managing Deferred Maintenance

National Institutes of Health (NIH)

Office of Research Facilities (ORF)

January 10th, 2024

NIH National Institutes of Health
*Turning Discovery Into Health*

# Agenda

1 NIH Overview

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3 Project Scoring and Prioritization (Growth)

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5 Deferred Maintenance Reduction Framework Overview

# NIH Overview

NIH is the steward of medical and behavioral research for the Nation. Its mission is to seek fundamental knowledge about the nature and behavior of living systems and the application of that knowledge to enhance health, lengthen life, and reduce illness and disability. The NIH Office of Research Facilities supports the NIH mission by providing, maintaining, and operating safe, healthy, and attractive facilities.

## NIH AT A GLANCE

**27**
Institutes and Centers

**270+**
# of government-owned facilities

**17M+**
Gross square feet

**$13B+**
Plant Replacement Value

**$350M**
FY23 Buildings and Facilities Appropriation

**$3.8B+**
Deferred Maintenance at the end of 2023

**7**
Campuses

# NASEM Consensus Study Findings

The NASEM Consensus Study provided an objective review of the challenges faced by NIH, and resulted in **increased awareness** by NIH, HHS, OMB, and Congress, and **improved transparency** to the capital planning and management process.

As directed by Congress, NIH entered a contract with the National Academies of Science, Engineering, and Medicine (NASEM) to assess the condition of the facilities on the Bethesda Campus, resulting in **14 recommendations in five categories**:

| Category | Project Scoring and Prioritization | Deferred Maintenance Management |
|---|---|---|
| Current Investment Condition | | ● |
| Capital Asset Management | ● | ● |
| Current Strategic Planning | ● | ● |
| Future of Capital Planning | ● | ● |
| Biomedical Research and Capital Assets | ● | |

● Relevant Recommendations Implementation Complete/Ongoing Improvement

## Governance: Project Scoring and Prioritization

Project scoring and prioritization are important aspects of NIH's decision-making process. Given that NIH is a research agency, the facility needs evolve as science evolves, so NIH **prioritizes projects with the strong participation of scientists**.

- The Research Facilities Advisory Committee (RFAC) utilizes a prioritization model to prioritize projects with a construction value of $3.5 million or greater.
- The results of this prioritization model are shared with the Congressional Appropriations Committees on a quarterly basis.

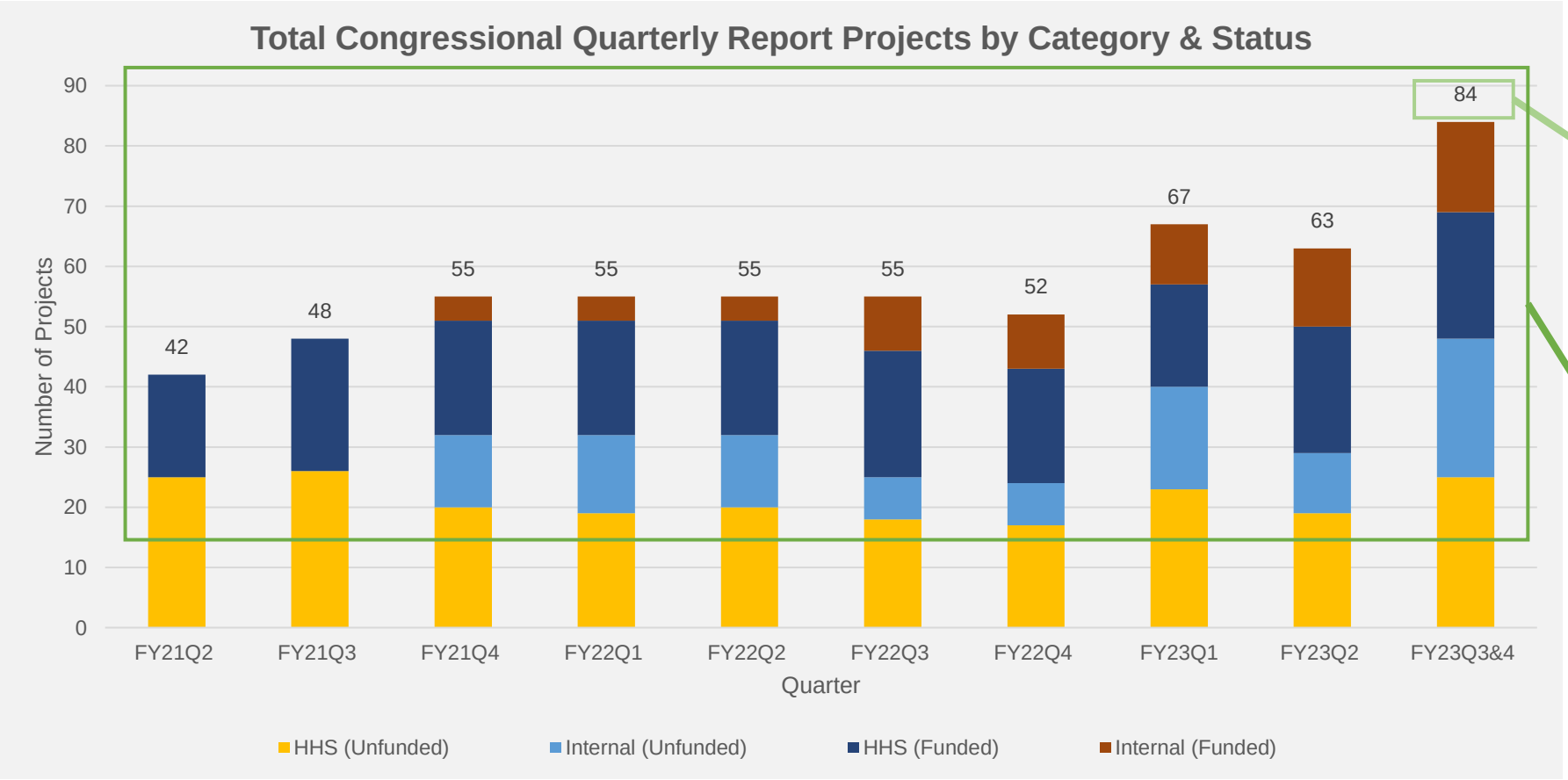
## Deferred Maintenance Management

When planning to reduce deferred maintenance, NIH has found that it is **more efficient to vacate an entire building or wing and give the entire building or wing a multidisciplinary life extension**. This approach helps:

- Reduce inefficiencies when repairing in occupied buildings
- Avoids interim life safety measures, construction risks, infection control, utility shutdown issues, etc.

# Project Scoring and Prioritization (Growth)

In accordance with the GAO identified leading practices and the NASEM recommendations, NIH has been partnering with the RFAC to score and prioritize projects, primarily focusing on mission dependency. The prioritized results and project statuses are presented to the Congressional Appropriations Committees quarterly. This procedure has bolstered transparency with the appropriators and also enhanced internal collaboration and efficiency.

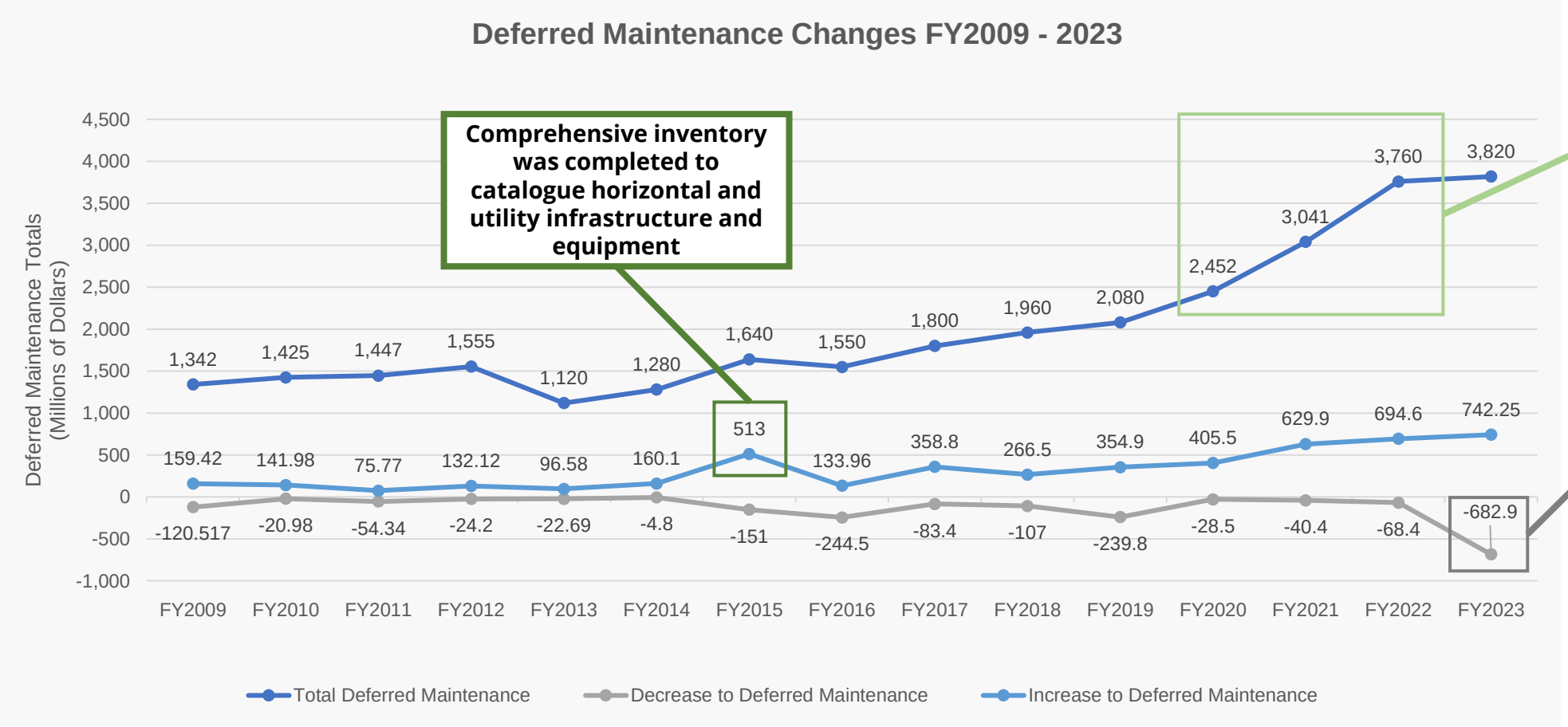



**Number of prioritized and reported projects has doubled (from 42 to 84) since second quarter of FY2021.**

**Total number of funded projects has doubled (from 17 to 36) since second quarter of FY2021.**

# Deferred Maintenance Changes Over Time

NIH has a mature data-collection and -management program. The deferred maintenance data is stored in a **facility condition database**, which an external contractor manages, alongside the asset, life cycle cost, and requirements data observed during the condition assessment surveys. This gives NIH a complete picture of building deficiencies requiring immediate attention, maintenance, and renewal items.



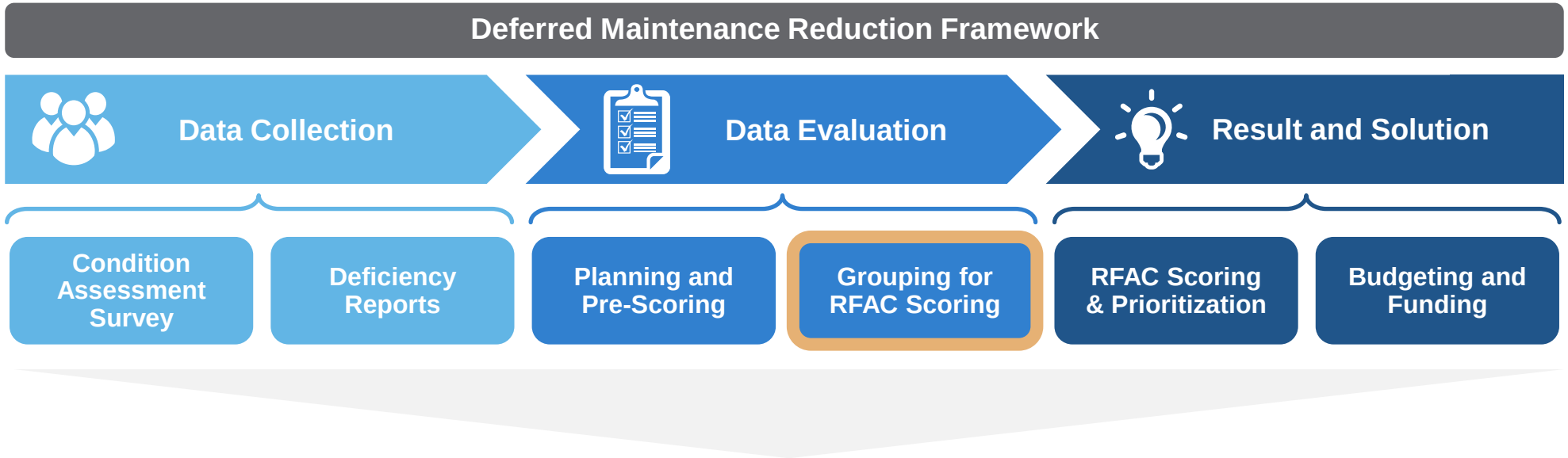

**Comprehensive inventory was completed to catalogue horizontal and utility infrastructure and equipment**

**Inflation had accelerated and the cost of construction increased due to factors such as COVID-19 and supply chain and labor challenges from FY2020 to FY2022**

**Completed Bldg 10 E-Wing Renovation and a large number of survey assessments items being determined resolved**

# Deferred Maintenance Reduction Framework Overview

NIH engaged Deloitte following the NASEM study focusing on evaluating ORF's capital planning and programming business processes, developing recommendations with a future-state vision, and implementing changes and improvements. In an effort to improve deferred maintenance strategies, NIH and Deloitte developed a deferred maintenance reduction framework and optimization model. **The use of the model takes place in the "Grouping for RFAC Scoring" sub-step of Data Evaluation.**




**Improvement Goals**

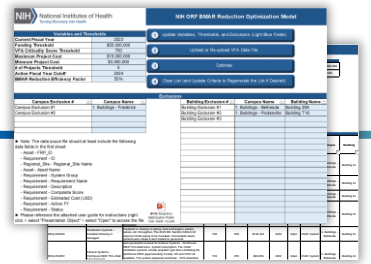
- **Streamline reduction process**
- **Achieve economies of scale**
- **Minimize disruption to spaces**

# Deferred Maintenance Reduction Optimization Model Overview

The deferred maintenance reduction optimization model was developed to **reduce the manual effort** required to generate a list of **multidisciplinary deferred maintenance-reducing projects** from crumbs to loaves. The visuals below demonstrate the **two capabilities** of the model.

Use case: when you have dedicated funding for deferred maintenance reduction and are looking for suggestions of projects, the **Deferred Maintenance Reduction Optimization Model** will generate recommendations under a minute.

1



2

Use case: when you are initiating a project for a building or/and system and are looking for related deferred maintenance items to be included, the **Deferred Maintenance Items Look up Model** will generate the list within seconds.

**Input**

- VFA Data Export
- Total Funding Allocation
- VFA Criticality Score Threshold
- Project Cost Thresholds and Ceilings
- Maximum No. of Projects
- Efficiency Factor

**Output**

- List of deferred maintenance items with their relevant information
  - Requirement ID, Name, and Description
  - System Group
  - Criticality Score
  - Action FY
  - Status
- Total Estimated Cost
- Cost Averaged Score
- Optional List of Deferred Maintenance Items

**Input**

- VFA Data Export
- Campus
- Building (Optional)
- System Group (Optional)
- Deferred Item Status

**Output**

- List of deferred maintenance items with their relevant information
  - Requirement ID, Name, and Description
  - Individual Score
  - Individual Estimated Cost
  - System Group
  - Action Year
  - Status
  - Campus and Building
- Total Estimated Cost
- Cost Averaged Score