Development and Use of Mission Readiness Approach for Aligning Facilities Investments with Mission

Briefing to Federal Facilities Council's Forum on the National Research Council's report "Predicting Outcomes of Investments in Maintenance and Repair of Federal Facilities"

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Key Recommendations from NRC Report "Predicting Outcomes of Investments in Maint and Repair of Federal Facilities"

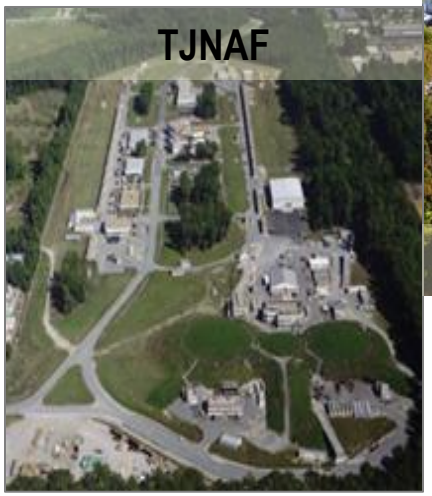
- **Recommendation 2 (Findings 1, 5, and 6). Federal agencies should develop more strategic approaches for investing in facilities maintenance and repair to achieve beneficial outcomes and mitigate risks. Such approaches should do the following:**
  - **Identify and prioritize the outcomes to be achieved through maintenance and repair investments and link those outcomes to achievement of agencies' missions and other public policy objectives**
  - **Provide a systematic approach to performance measurement, analysis, and feedback.**
  - **Provide for greater transparency and credibility in budget development, decision making, and budget execution.**

- **Recommendation 4 (Finding 6). Federal facilities program managers should plan for multiple internal and external communications when presenting maintenance and repair requests to other decision makers and staff. Information should be accurate, acknowledge uncertainties, and be available in multiple forms to meet the needs of different audiences. The basis for predicted outcomes from a given level of investment in maintenance and repair should be transparent and available to decision makers.**

Office of Science (SC) Overview

- Single largest supporter of basic research in the physical sciences in the United States (Budget ~$5 billion).
- SC manages and supports basic science research programs in:
  - Advanced Scientific Computing Research.
  - Basic Energy Sciences (including materials sciences, chemistry, physical biosciences, and geosciences)
  - Biological and Environmental Research (including genomics-based systems biology for energy & environment, climate science, and subsurface science for DOE legacy sites)
  - Fusion Energy Sciences
  - High Energy Physics
  - Nuclear Physics
- Operate 10 National laboratories with over 20 world-class scientific user facilities.
- All labs are operated by Management and Operating contractors.
- Labs have over 1,500 buildings and 20 million square feet of space; 25,000+ staff; $5.5B budget

Infrastructure is the Foundation for our Laboratories and User Facilities



Aligning Facilities Investment Priorities with Mission Needs

- Traditional Facilities Management metrics such as Asset Condition Index (ACI), Deferred Maintenance (DM) and Maintenance Investment Index (MII) do not relate directly to Mission Readiness.
- Our labs were chasing facilities data/metrics and not focusing on mission readiness.
- A corporate concern was that maintenance investment* was not aligned with mission needs.
- In FY 2009, labs proposed a “Mission Readiness” approach with SC-Hqs endorsement and established a Facilities Managers Working Group to develop it.

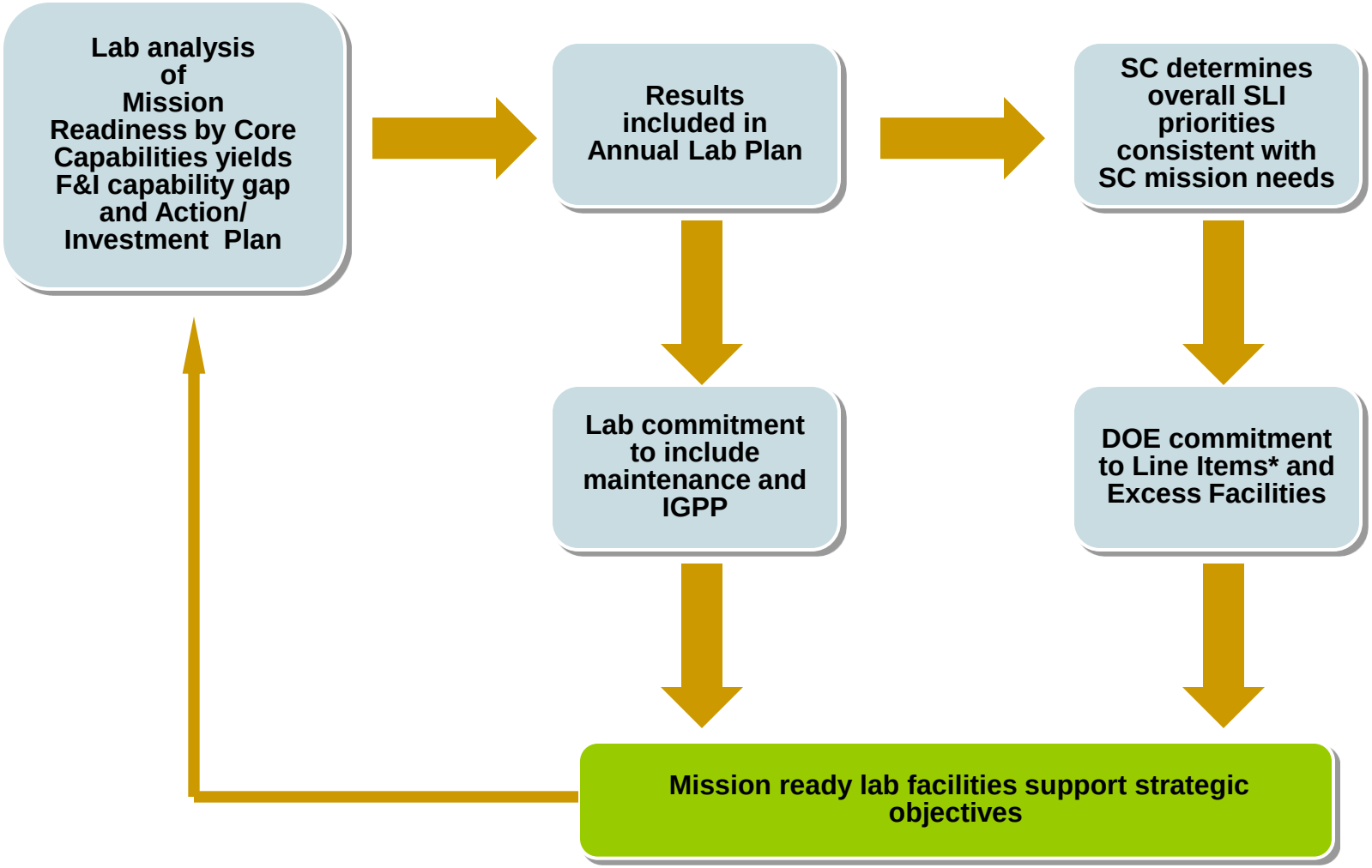
**SC labs fund maintenance from overhead*

Aligning Facilities Investment Priorities with Mission Needs

- Mission Readiness (MR) is the capability of facilities and infrastructure to enable delivery of the scientific mission assigned to the laboratory.
- The outcome of the MR Process is included in the SC Annual Laboratory Planning process focused on missions.
- Likewise the MR outcome supports the Science Laboratories Infrastructure (SLI) Modernization Initiative which identified $2B of needed investments in the laboratories.

Mission Readiness Assessment Process

Driven by Science – executed through budget and contract commitments



**** Science Laboratories Infrastructure (SLI) Modernization Initiative which identified $2B of needed line item investments ($10M and above) in the laboratories***

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Gap/Plan Table in Annual Laboratory Plans

Core Capabilities		Mission Ready, Assumes TYSP Implemented				Key Buildings	Key Core Capability Objectives	Facility and Infrastructure Capability Gap	Action Plan	
		N[a]	M[b]	P[c]	C[d]				Laboratory	DOE
Core Capability 1	Now									
	In 5 Years									
	In 10 Years									

[a]N = Not [b]M = Marginal [c]P = Partial [d]C = Capable

- Labs assess state of facilities and infrastructure, now and in the future.
  - Not capable, Marginally Capable, Partially Capable, Capable
- Capability gaps are identified, and translated into an action plan.
  - Laboratory investments include IGPP*, deferred maintenance reduction funds, maintenance funds, and non-capitalized alterations.
  - DOE investments include SLI line items, and programmatic GPP.
- A similar evaluation of support facilities is also prepared.

** IGPP – Institutional General Plant Projects are small construction projects less than $10M; funded from lab overhead*

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Key is the Lab's Assessment Process

- Achieving Consensus
  - Facility Managers and Program staff systematically partner to review facility needs against programs needs now and in future
  - Reach agreement on priorities which are then jointly presented to management
- Process documented and institutionalized in FY 2009 to FY 2011
- Planned capital investments provided in lab's SC Annual Laboratory Plan
- Peer Review of Process Implementation

Lab analysis of Mission Readiness by Core Capabilities yields F&I capability gap and Action/ investment Plan

Peer Reviews:

- All10 Laboratories
- 3-year implementation
- >70 participants + presenters
- Reports for Lab action

Benefits of Lab Peer Reviews

- Documentation of various lab internal processes and procedures was one component of the MR Peer Review.
- Better understanding of infrastructure needs among all labs by all participants in the MR Peer Review process.
- Funding requests are more transparent for all labs.
- MR Peer Reviews have been an excellent tool to explain the operating costs and facilities structure to senior management and end users.
- Strategic Planning has been or is being developed at all SC Labs.
- More SC Labs are using benchmarking to compare their operational costs.

Benefits of Lab Peer Reviews

- All labs have a clear understanding of the “Facility Owner” who has full responsibility to assure that the facility is capable of providing the necessary support of the scientific mission.
- All labs collect information regarding core mission capabilities in some form of Facility Matrix that documents facility gaps compared with core capabilities of the SC Lab.
- Broad representation on the Long Term Master Planning Task Force and early participation with project teams assists in the identification of infrastructure gaps.
- The MR Peer Reviews verified that MR processes are used to insure F&I information is included in planning documentation in a manner consistent across all SC Labs.

An Unanticipated Benefit of Peer Reviews – Exposure of Best Practices

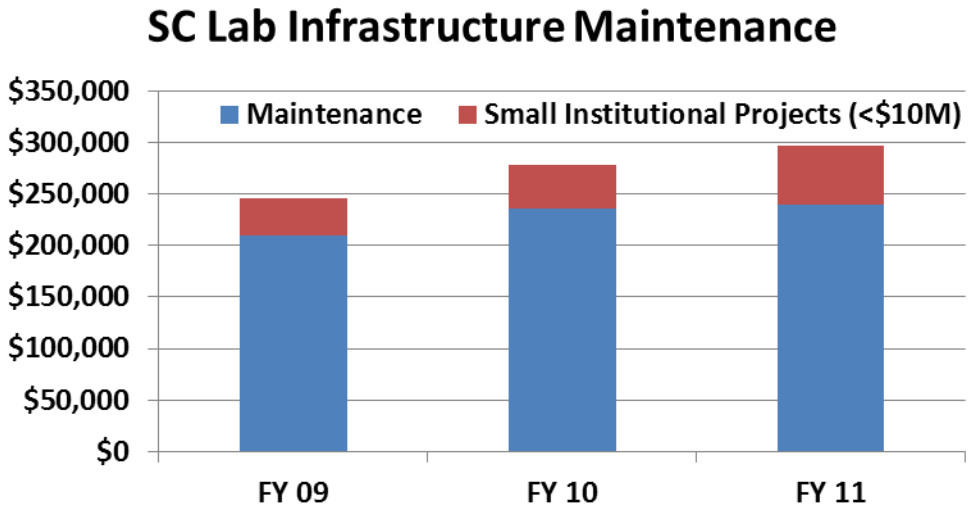
SC Labs have embraced best practices used at other labs that have been appropriate to implement, such as:

- Identification of better performing contractors or service providers
- GIS mapping tools
- Facility condition assessments – surveys, vendors, frequencies, costs
- Maintenance management systems
- Predictive maintenance tools
- Organizational structures
- Budget call process
- Master Planning processes
- Ideas to improve relationships with the end users and foster a “One lab” culture
- Energy management

This is not intended to be a comprehensive listing of the identified best practices.

And, the Results Are:

- Complex Wide Focus on Mission Outcomes
- "Business Plans" addressing facility needs in light of missions
- FIMS* data accurate
- MII > 2% for all SC Labs
- Reduction in DM
- ACI > 0.95



	Maintenance	DM	RPV	ACI	MII
FY 09	$209,936,000	$691,095,575	$10,280,203,775	0.933	2.04%
FY 10	$235,981,000	$524,150,316	$10,554,291,163	0.950	2.24%
FY 11	$239,065,000	$507,758,150	$11,013,840,676	0.954	2.17%

** FIMS = DOE's Facility Information Management System*

Summary

- The Mission Readiness approach that the SC Complex has developed has accomplished its goal of aligning facility investments with mission needs.
- Maintenance investments have actually increased as management better understands the impacts of investments on mission.
- The approach support Recommendations 2 (strategic approach) and 4 (communications) of the NRC Report.

Questions?

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