

NASA Facilities Strategy

What it Means to You and How You Can Help

Presentation to Facilities Engineering and
Real Property Symposium

May 13, 2009

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Facilities Strategy – Investment Implications

NASA will renew and modernize its facilities to sustain its capabilities to meet current and future mission requirements, and to accommodate those capabilities in fewer, more efficient facilities.

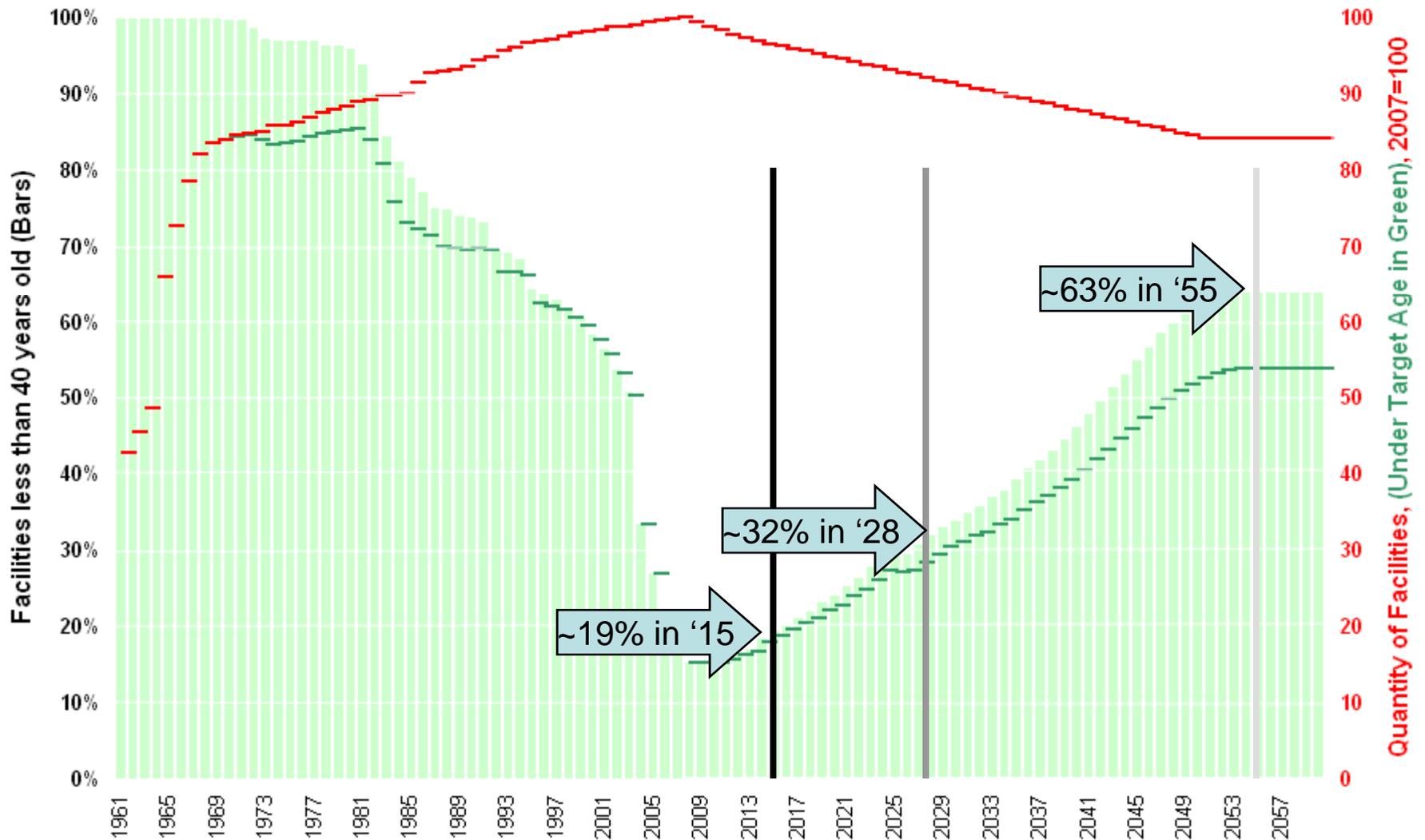
- Investment Focus:
 - Concentrate facility investments on projects that reduce infrastructure and life cycle operating costs while sustaining required capability.
- Build New Capability:
 - Only for requirements that cannot be met by existing facilities inside or outside NASA
 - In a way that minimizes excess capacity across the Agency
 - In a way that minimizes life cycle costs, including impact on horizontal infrastructure and end-of-life costs
 - Offset with a greater reduction to existing infrastructure.
- Consolidation Strategy:
 - Reduce infrastructure by consolidating technical and institutional facilities.
 - Become more space efficient (space standards, telecommuting, etc.)
 - Eliminate excess and duplicative facilities

Comparison of Options in 2028

		Capability Infrastructure Size	Less Smaller	Similar Smaller (Slow & Steady)	Similar Similar	More Smaller	More Similar	2009 Budget
By 2028	Facilities under 40 (likely suitable)	%	32%	32%	32%	45%	45%	15%
		CRV	\$5.7 B	\$6.8 B	\$7.3 B	\$9.5 B	\$10.2 B	\$3.1 B
	Infrastructure Size Reduction		26%	8%	—	8%	—	—
Costs	Investment Change v. \$100M '09 Budget		+ \$240 M	+ \$285 M	+ \$310 M	+ \$470 M	+ \$505 M	—
	O&M Trend		↓↓	—↓	— —	↑↓	↑—	↑↑
Other Implications	Mission risk: onsite facilities		Fewer facilities Higher risk assoc. w/ nonunique facilities	Fewer over-40 facilities but even older than today	Fewer over-40 facilities but even older than today	Least over-40 facilities (but still older than today)	Least over-40 facilities (but still older than today)	More, older facilities
	Mission risk: shift offsite		New risk, New cost	—	—	—	—	—
	Changes historical onsite/offsite split?		Yes	—	—	—	—	—
	Space utilization culture change?		Significant	Considerable	Moderate	Considerable	Moderate	—
	Investment Challenges		Reduce Infrast.	Renew Capability Reduce Infrast.	Renew Capability	Enhance Capability Renew Capability Reduce Infrast.	Enhance Capability Renew Capability	React to Failures

Source: Facilities Strategy briefing to Facilities Program Board, 17 March 2009

“Similar/Smaller” Forecast



Key Facilities Strategy Goals

- Reduce risk to mission by raising the share of facilities under 40 years old (likely suitable)
 - 19% by 2015
 - 32% by 2028
 - 63% by 2055
- Reduce institutional size to reduce long term facilities costs
 - 10% reduction in real CRV by 2020 *
 - 15% reduction in real CRV by 2055 *

* *Headquarters will entertain alternative means of tracking progress as proposed by Centers*

New Governance Approach

Facility Program Board

- The FPB serves as the Agency's senior decision-making body for facility, infrastructure, and technical capability investments
- Approves all facility investments (selection and prioritization) regardless of funding source to include all Construction (Institutional, Technical, and Programmatic) facility issues
- Authority includes the Recapitalization Program and the facility aspect of technical capabilities and maintenance and operation of all NASA facilities
- Approves all NASA-wide facilities policies and processes to ensure successful achievement of NASA strategic goals and objectives
- Membership is the same as the PMC

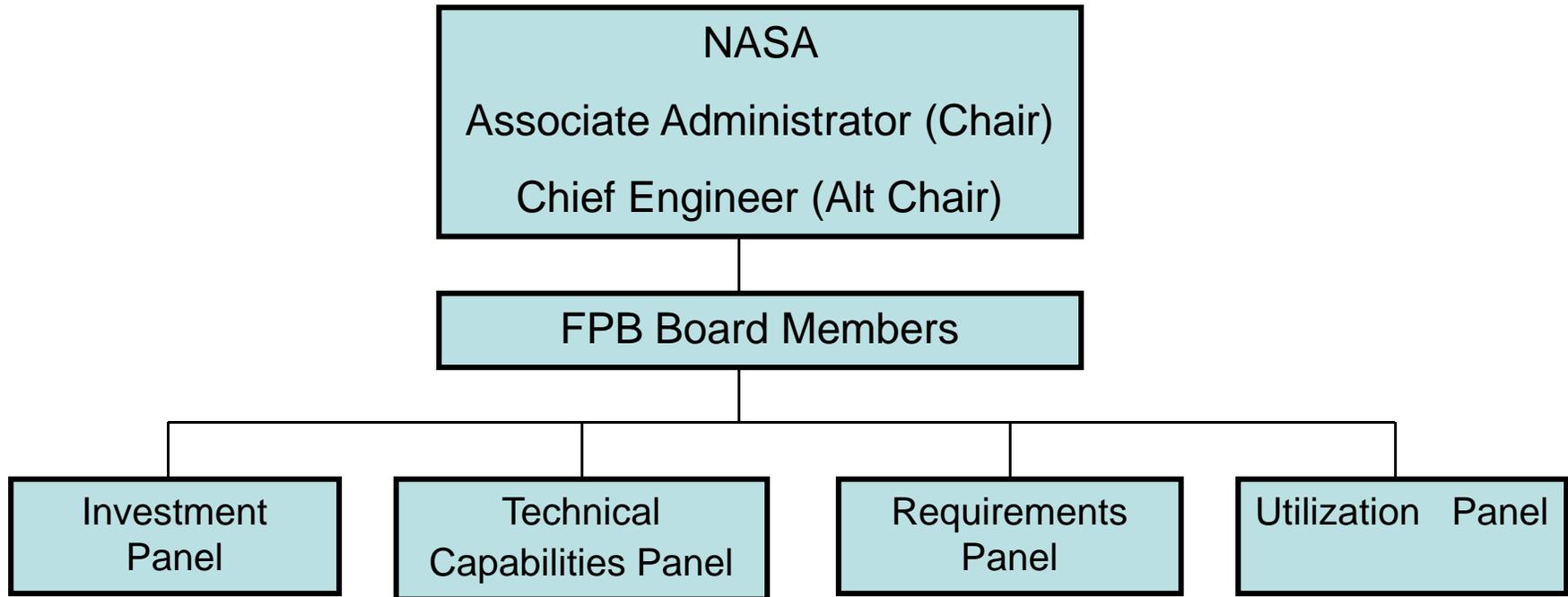
Chaired by the Associate Administrator – meets (at minimum) quarterly

Executive Secretary: Kevin McCulla, PA&E, 202-358-4430, kevin.m.mcculla@nasa.gov

Expectations for FPB

- **The FPB is a senior decision making body for the Agency's facilities, infrastructure, and technical capability investments**
 - **Expectation is that senior members will be at the table making the decisions (This should not be delegated downward)**
- **The value of the FPB and the associated panel members**
 - **Is to come up with solutions and make recommendations for FPB decisions as an integrated decision making entity**
- **Panels**
 - **Panel Leads and members are not expected to do all the work**
 - **OPII and FERP will provide resources and support as needed**
 - **Membership is intended to be small in size**
 - **With the ability to ask for additional support from the FPB when needed**
 - **Panel meetings should be scheduled only as needed**
 - **Membership should maintain some level of diversity between MD's and CD's**
 - **There is a team led by OPII that will spell out the timelines and reviews required by each panel as it relates to the PPBE cycle by FY as we move forward and refine our FPB process**

FPB Organization Chart



Challenges and Opportunities

How NASA Facilities and Real Property Community Can Help Bring Strategy to Fruition

It was the best of times, it was the worst of times, it was the age of wisdom, it was the age of foolishness, it was the epoch of belief, it was the epoch of incredulity...it was the spring of hope, it was the winter of despair, we had everything before us, we had nothing before us...

-Charles Dickens-

- Consensus on Sensible Strategy--Internally and Externally
- Funding Shortfall
- OMB Conditional Support
- Master Plans Inconsistent with Strategy and Funding Realities
- Mission Directorate Conditional Support (MSIR, SMC)
- Execution, Execution, Execution
- Senior Leadership Taking Ownership
- 5 X 5's May Cannibalize Recapitalization
- Lack of Consistent Metrics to Assess and Advocate Projects
- "Nicer than Necessary" Undermines Support
- Inability to Let Go and Consolidate

Consensus on Sensible Strategy-- Internally and Externally

- Mission Support Integration Review (April 2008)
 - All Agency senior management through Deputy Administrator
 - Consensus that NASA needed a comprehensive, integrated facility strategy, reflected in detailed and consistent Center Master Plans, based in program-identified requirements, tied to funding requirements and agreed-upon metrics and goals
- Administrator Selected “Slow and Steady” Strategy
- PA&E-sponsored Agency-wide Study
- SMC selects new governance model: FPB
- FPB selects “Similar-Smaller” strategy
- OMB demonstrates support in FY10 budget settlement
- Congress...

Center Master Plans Need to Align with Agency Strategy

- Generally don't reflect goal to shrink Agency infrastructure
- Aren't constrained by funding realities
- Generally aren't validated by Mission Directorates as to requirements scope
- Aren't integrated with other Centers as to Agency-wide capacity
- Include various "partnering", research park, federal city, etc., initiatives that offer the promise of spreading fixed costs in the short-term but greatly increase NASA's long-term liability for non-mission driven infrastructure
- Generally don't aim to aggressively minimize horizontal infrastructure
- Must include energy savings and cost effective renewable energy initiatives

Execution Pitfalls Hurt Credibility

- Repair by Replacement lag time
- Meters – delays in installation and automated system utilization, cost increases
- Must track savings and ROI actuals, reductions in square footage and DM to sustain support.
 - Prove that the business case was real and skeptics (“muddle-through” heritage) will feel a lot better about the sacrifices necessary to make the investments
- BPR-funds execution metrics
- CMO Adjustments – reducing facility maintenance
- Outfitting costs – potentially renegeing on commitments made in a “competitive” environment

Reflections on Safety Driven “5 X 5’s”

- How long have these buildings been out of spec? Where were these projects in past years?
- Why are the projects so low on Center priorities and Agency 5 X 5 list?
- Are all similar “out of spec” safety projects here in the FY11 program? If not, and we will see more next year, are they really critical enough in FY11 to displace recapitalization requirements?
- We need a comprehensive list of all such requirements, and:
 - An **Abatement Plan**, to get to them over time
 - A **Mitigation Plan**, to minimize the risk of the (long-existing) out-of-spec condition in the meantime
- If we let our repair requirements cannibalize our limited recapitalization funding, we’ll always be repairing old infrastructure instead of attacking the root cause

Business Case Metrics

- Operating costs need to be much better identified by facility
- Agree on best metric for size of infrastructure: CRV or conditioned square footage or ???
- Agency-wide process to integrate priorities across types of recapitalization projects, and be able to easily explain logic (vs. passing to FPB)
- Need consensus on standard way each project will show return on investment
 - Payback period
 - Savings to Investment ratio
 - Percent rate of return
 - Net present value
 - Reduced square footage
 - Reduced deferred maintenance
 - Related goals
 - Energy savings and renewable energy credit
 - Water savings

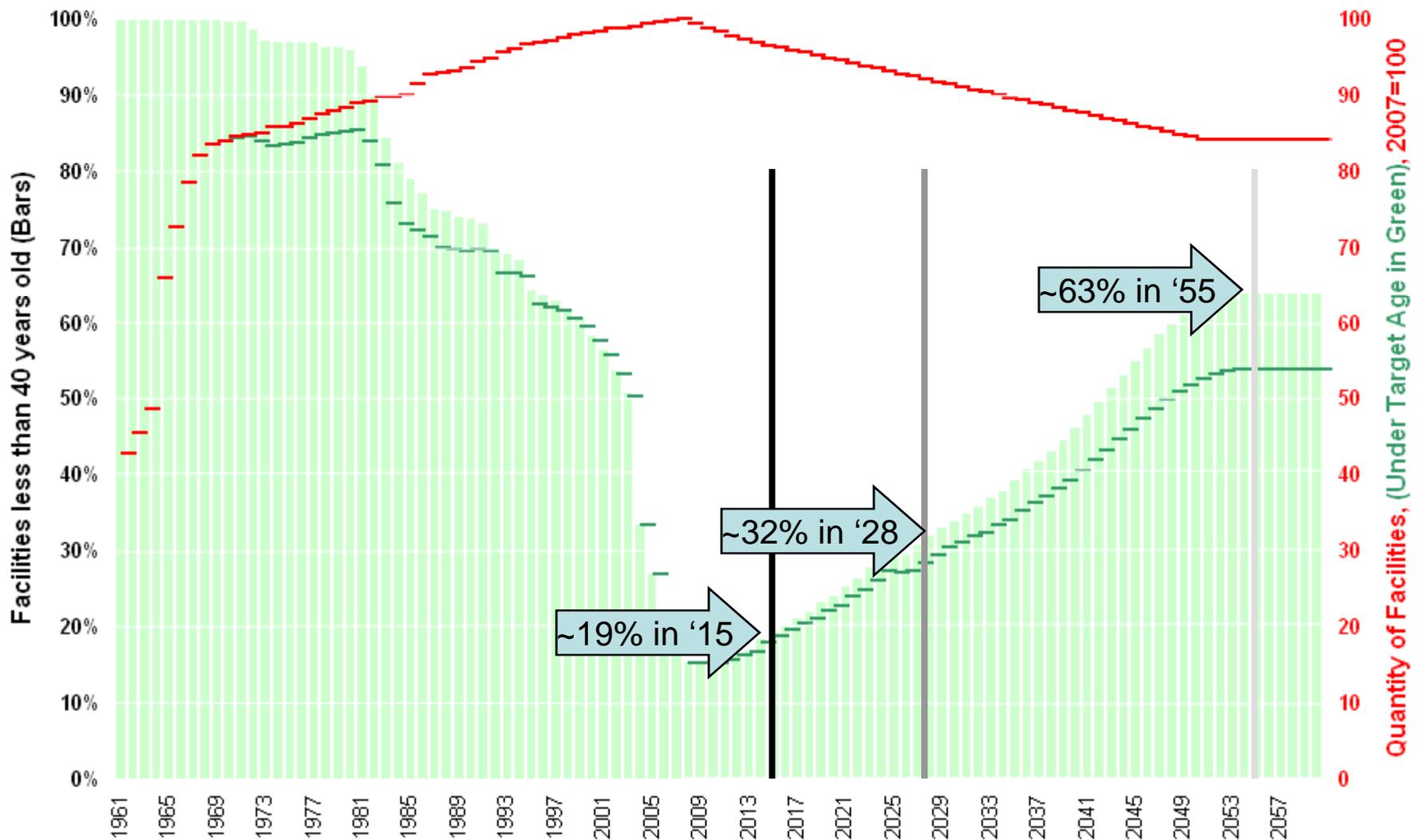
Nicer Than Necessary

- Features that indicate to important stakeholders that we have more money than sense, and things must not be as bad as we're claiming
 - Program funded facilities are not excepted
- One bad example negates a hundred pictures of corroded pipes and rusted out HVAC equipment
- LEED silver, gold and platinum: we have a policy
- Space standards provide for adequate, professional space, yet minimize operating costs
 - Sends a message to whoever controls your budget

Let Go of Facilities and Consolidate

- Don't Need List
 - What didn't make it to closure
 - Subsequent reclaims
- Need better way to explore consolidation opportunities within Centers and across Centers (populated Center Master Plans will help)
 - Especially applies to program funded requirements—new process should provide for better visibility
- Reimbursable gap-filling for a great capability that programs say they don't need is a two-edged sword
 - NASA still retains liability for an aging, non-core asset
 - Managing asset diverts NASA effort from core functions
- Need to stop retaining facilities and test equipment that are only marginally or even arguably relevant to NASA's future program
 - Center judgment doesn't trump
 - Programs will (have to) have the money to re-create capability if needed
 - Meanwhile, less-than-fully-utilized assets are diverting much needed funding from core assets

“Similar/Smaller” Forecast



BACK-UP

Investment Panel

Duties: Provides Analysis and Recommendations to the FPB Chair for:

- Facility Return on Investment (ROI) analysis
- PPBE Guidance
- Budgetary Analysis
- Budgetary Recommendations
- Agency's Capital Investment Program Plan (CIPP)

Panel Members

- Rob Strain, Lead
 - Bobby German
 - Joel Kearns (ESMD Support)
 - Rick Keegan (OPII Support)
 - David Radzanowski*
 - Harriet Ross (FERP Support)
 - David Schurr

*Dual membership

Technical Capabilities Panel

Duties: Provides Analysis and Recommendations to the FPB Chair for:

- Investments, Consolidations and reductions in Agency technical capabilities.
- The panel will review and make recommendations to the Board on MOA/MOU's between NASA and other federal agencies on technical capabilities

Panel Members

- Mike Ryschkewitsch, Lead
 - Frank Bellinger (FERP Support)
 - Chuck Gay*
 - Walter Hussey (SCAP Support)
 - Robert Lightfoot
 - David McBride
 - Krista Paquin (OPII Support)
 - Kevin Petersen
 - Lesa Roe

*Dual membership

Requirements Panel

Duties: Provides Analysis and Recommendations to the FPB Chair for:

- Programmatic and technical infrastructure facility requirements
- A minimum set of requirements necessary to adequately address the Agency needs

Panel Members

- Requirements Panel
 - Doug Cooke, Lead
 - **Bob Cabana**
 - **Mike Coats**
 - **Chuck Gay***
 - **Lynn Irvine (OPII Support)**
 - **Tom Irvine***
 - **David Radzanowski**
 - **Scott Robinson (FERP Support)**

* Dual membership

Utilization Panel

Duties: Provides Analysis and Recommendations to the FPB Chair for:

- Facility Utilization with regard to expansion, out grants, and consolidations

Panel Members

- **Woodrow Whitlow, Lead**
 - Terry Bowie
 - Gene Goldman
 - **Willie Gookin (SCAP Support)**
 - Tom Irvine*
 - Tom Luedtke
 - **Krista Paquin (OPII Support)**
 - Gene Tattini
 - **Kim Toufectis (FERP Support)**
 - Pete Worden

*Dual membership