NAVFAC
Naval Facilities Engineering Systems Command

Navy Facility Investment Model (FIM)

Sandra Dunn
Facility Readiness Program Manager

CNIC N4 / NAVFAC PW

July 2024

Navy Facilities Investment Strategy

Objective: Optimize the outcome of facility investments in support of critical mission requirements

Policy:

- Target mission-critical facilities investment through Mission Assurance analysis and CNO's NAVPLAN

- Balance investments across POM Strategic Priorities

- Maintain existing facilities while investing in SIOP and new platform infrastructure that supports increased lethality (SSBN, F-35C, MQ-25, etc.)

- Directed funding and Lines of Effort (LOEs) are utilized to allocate sustainment funds for categories of facilities

- MILCONs and Special Projects are prioritized using Shore CFT process.

- Sustainment funds are prioritized for Life, Health and Safety, operational dredging, critical operational breakdown, critical inspections, PMs then using the Targeted Facility Investment Strategy

Decision Support Using the Facility Investment Model (FIM)

- Navy provides policy which enables regions and installations to determine individual facility investments

- FIM is available in FRES which can be accessed by users with a CAC

- FIM provides the analysis supporting the TFIS policy

- FIM identifies candidates for divestment using MDI, CI, and PRV, as well as Configuration Rating, Operational Status Code and the draft TFIS policy

- Failing Facilities Report provides recommendations for divestment, restoration and sustainment

- FIM supports OPNAV N4 analysis to optimize Sustainment (ST) and Restoration/Modernization (RM) funding

- The Navy has conducted a Verification Validation and Accreditation (VV&A) study for the FIM which is under review by OPNAV N8

What is FIM

- Predictive model that captures the impact of all forms of facility investment on future facility condition.

- Enable forecasts both at the facility-level and at the portfolio level for any customized group of Navy facilities.

- Implemented in web application as part of the Navy FRES suite of applications.

FSRM Investments

| Sustainment | Restoration | Demolition | New Construction | **Sustainment Funding & Rules** Define sustainment funding scenario by setting percent of FSM requirement to fund. |

Sustainment Funding as Percent of FSM V25.2 Requirement

Shore CFT	2024 %	2024 $ (K)	FSM Total $ (K)	2025 %	2025 $ (K)	FSM Total $ (K)	2026 %	2026 $ (K)	FSM Total $ (K)	2027 %	2027 $ (K)	FSM Total $ (K)	2028 %	2028 $ (K)	FSM Total $ (K)	2029 %	2029 $ (K)	FSM Total $ (K)	2030 %	2030 $ (K)	FSM Total $ (K)
1	100	107,693	$107,693	100	121,029	$121,029	100	123,569	$123,569	100	126,166	$126,166	100	128,809	$128,809	100	131,521	$131,521	100	134,278	$134,278
2	80	58,454	$73,067	80	66,734	$83,417	80	68,134	$85,168	80	69,566	$86,958	80	71,024	$88,780	80	72,519	$90,649	80	74,039	$92,549
3	80	263,701	$329,627	80	341,302	$426,627	80	348,464	$435,580	80	355,789	$444,736	80	363,242	$454,052	80	370,889	$463,611	80	378,665	$473,331
4	80	2,907	$3,634	80	3,219	$4,024	80	3,287	$4,108	80	3,356	$4,195	80	3,426	$4,283	80	3,498	$4,373	80	3,572	$4,464

Forecast

Shore Capability Area		Facility Count		PRV ($K)	FY 2024		FY 2025		FY 2026		FY 2027			
					CI	RSL	CI	RSL	CI	RSL	CI	RSL		RSL
WATERFRONT OPS		57		$827,877	71.49	8.1	69.84	6.94	68.16	5.77	66.47	4.6		1.1

RPUID	Facility Name	Facility Number	EOY23 CI	EOY23 RSL	MDI	Installation Name	PRV ($K)	FY 2024		FY 2025		FY 2026	
								CI	RSL	CI	RSL	CI	RSL
9708	SEAWALL	7433	60	0	99	N68436 NAVAL BASE KITSAP BREMERTON WA	$474	57.57	-1.26	55.15	-2.52	52.72	-3.78
9712	DRY DOCK CAISSON MOORING PIER	7438	80	10.81	34	N68436 NAVAL BASE KITSAP BREMERTON WA	$28	77.89	9.55	75.7	8.29	73.44	7.03
9769	K/B DOCK	7273	66	4.26	70	N68436 NAVAL BASE KITSAP BREMERTON WA	$12,259	64.24	3.00	62.46	1.73	60.68	0.48
9780	DELTA PIER	7400	73	6.97	95	N68436 NAVAL BASE KITSAP BREMERTON WA	$188,505	71.21	5.97	69.39	4.97	67.54	3.97
9785	WATERFRONT FACILITY-SEAWALL	7411	100	37	99	N68436 NAVAL BASE KITSAP BREMERTON WA	$1,269	99.98	35.74	99.9	34.48	99.74	33.20
10798	DEPERMING BUILDING	7801	74	10.19	13	N68436 NAVAL BASE KITSAP BREMERTON WA	$5,083	72.35	8.93	70.67	7.67	68.96	6.41

Model Overview

- **Sustainment (ST)**
    - Facility Sustainment Model requirements pre-loaded.
    - Model CI degradation approach is SMS-based; degradation depends on % of underfunding.

- **Restoration**
    - Prioritizes investment per Navy's Targeted Facilities Investment Strategy (TFIS).
    - Also allows customized import of restoration projects.

- **Divestment**
    - Identifies candidates for divestment in a manner consistent with TFIS.
    - Divestment strategy used to generate FIM Failing Facilities Report.

- **New Construction**
    - Accounts for forecasted new construction facilities as result of a project.

- **Goal Seeking**
    - Allows FIM to obtain a rough estimate of additional restoration funding needed to reach portfolio-level average CI goals, while accounting for degradation.

Targeted Facility Investment Strategy (TFIS)

- The FIM uses current Navy priorities for facility investment.

- Navy's Line of Effort (LOE) Based TFIS policy takes a granular approach to incorporate richer datasets:

  – Master system level condition for buildings and structures

  – Navy's LOEs, which are aligned to CNO Plan 2022

  – Specialized structures and utilities

LOE	Structures		Buildings				Other			
	Specialized Structures	Utilities	AB: Shell/Skin CI<75	D: Systems CI<85	C: Interiors CI<80	Non-CI Qualifying Reqs	Parking, Roads, Stormwater	Other Misc.	Unassigned	Demolition
1	1	1	1	3	7	7	7	7	25	10
2	2	2	6	6	7	13	18	24	25	10
3	4	4	6	6	8	13	19	24	25	10
4	5	5	9	9	9	13	20	24	25	10
5	6	6	10	10	11	14	21	24	25	10
7	6	6	10	12	15	16	22	24	25	10
TBD	6	6	10	12	15	17	23	24	25	10

Legend:

Target Focus Investment Area	Priority Score
A	1-6
B	7-12
Demolition	10
Non-Targeted	13 and above

Targeted Improvements

Targeted Facilities

FY24
- $0.7B
- $3.6B
- $2.3B
- $0.8B

FY30
- $0.3B
- $7.0B
- $1.1B
- $0.1B

Other Facilities

FY24
- $22.1B
- $41.9B
- $66.1B

FY30
- $14.4B
- $13.1B
- $83.5B
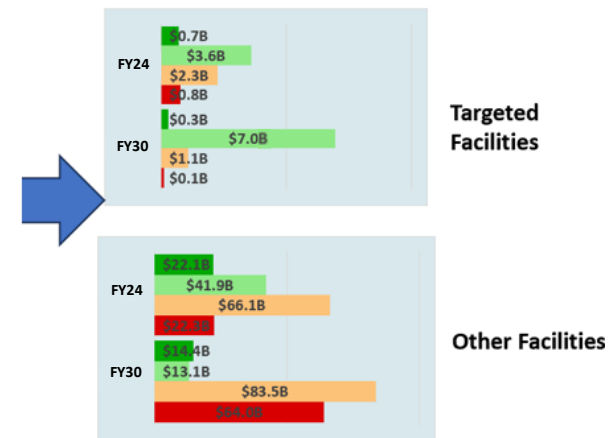
FIM Divestment Strategy

- FIM uses a Divestment analysis to support CNIC N4, in a manner consistent with the TFIS priorities.

- Divestment provide an objective basis for facilities that will be good candidates for demolition or other disposal methods, to be used as a starting point for subjective review.

- Leverages NAVFAC research into costs of demolition and assessment of disposal value.
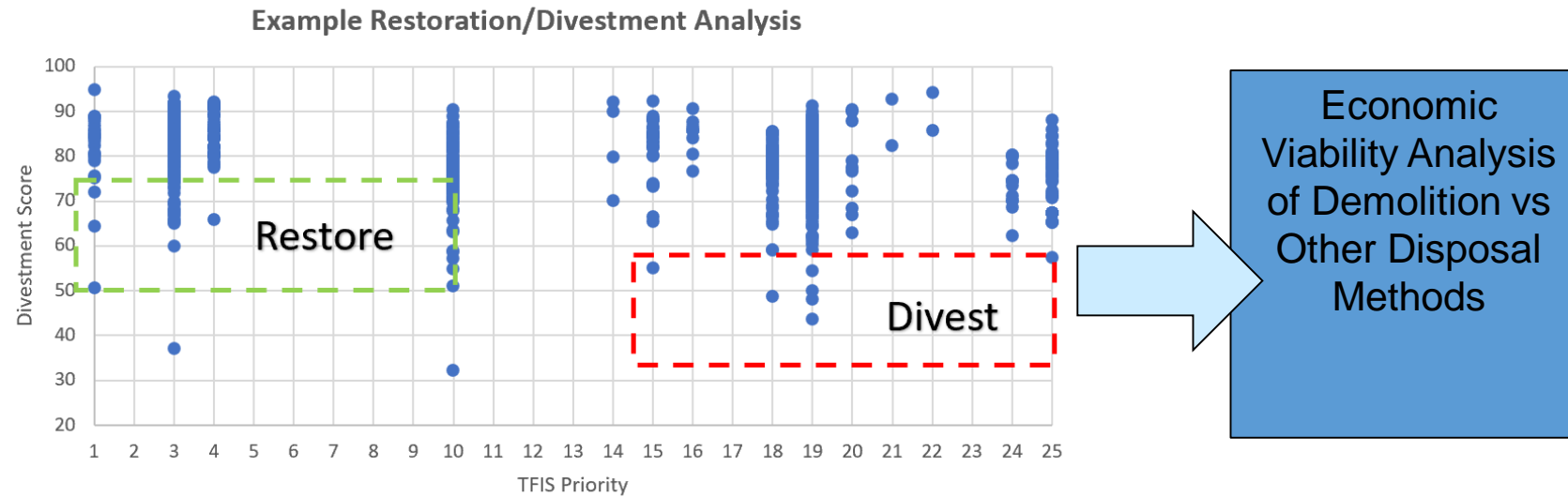
Example Restoration/Divestment Analysis

Economic Viability Analysis of Demolition vs Other Disposal Methods

FIM Failing Facilities Report

- The FIM generates a Failing Facilities Report to assist in answering annual POM tasker to OASD(EI&E) on the service's plan to eliminate failing (less than 60 CI) facilities.

- For the Failing Facilities Report, the FIM calculates a 0-100 Divestment Score, using the below factors:

  - Normalized CBM Score (generated using TFIS policy)

  - RPA Operational Status Code

  - IFOM Rating (calculated as lower of CI or Configuration Rating)

  - MDI

- Facilities with a Divestment Score less than 60 are recommended for Divestment. Facilities on CNIC's Demo plan are assigned Category Demo.

FIM Failing Facilities Report

The FIM generates a Failing Facilities Report to assist in answering annual POM tasker to OASD(EI&E) on the service's plan to eliminate failing (less than 60 CI) facilities. The report:

- Provides recommendations for divestment, restoration and sustainment for facilities in scenario.

- Identifies additional candidates for CNIC demolition plan.

- Helps support the Navy's Facility Sustainment, Restoration, and Modernization investment decisions.

New Construction

- New construction records resulting from a project, can be uploaded and included in the FIM scenario Facility Universe.

- The new construction facilities are included in the Condition Forecast.

Goal Seeking Methodology
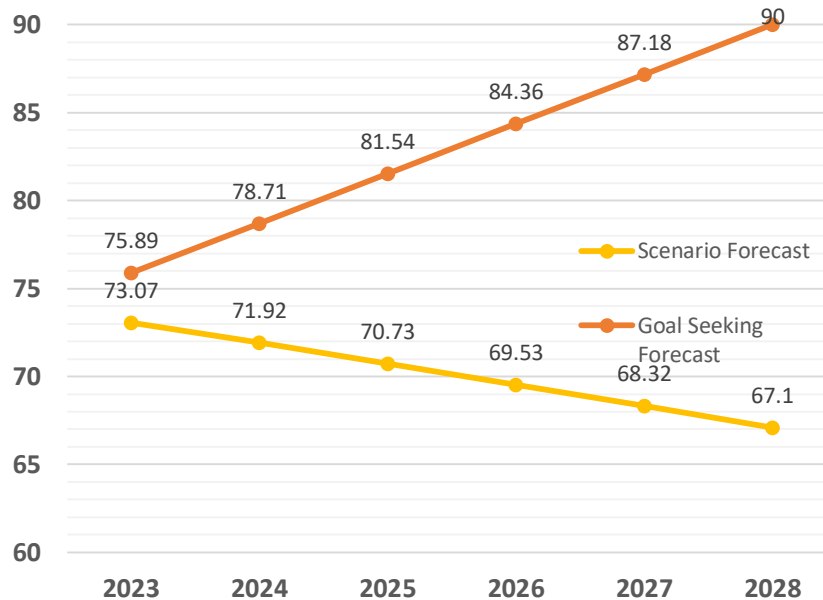
1. Calculate CI trend (in terms of yearly CI goals) needed to meet CI Goal at the end of forecast period.
2. Calculate Restoration needed for the first year's CI Goal.
3. For the second year, calculate restoration needed **taking into account the degradation cost after first year CI goal is met.**
4. Repeat procedure in Step 3 for every subsequent year until CI goal is reached.

Verification Validation and Accreditation Study

- OPNAV N81 requested a Verification Validation and Accreditation (VV&A) study and report of the FIM to obtain OPNAV N81 accreditation.

- Study involved a retrospective analysis based on verification of a 3-year forecast starting with FY18, in order to determine if the FIM's forecasts verify both at portfolio and installation levels.

- Results show that the FIM forecasts verify very closely at the total Navy level, while there are outliers at the installation level. Reasons for variances at installations were result of unexpected FSRM investments due to storms/disasters or latency of updating facility condition in authoritative databases.

Navy-wide Verification
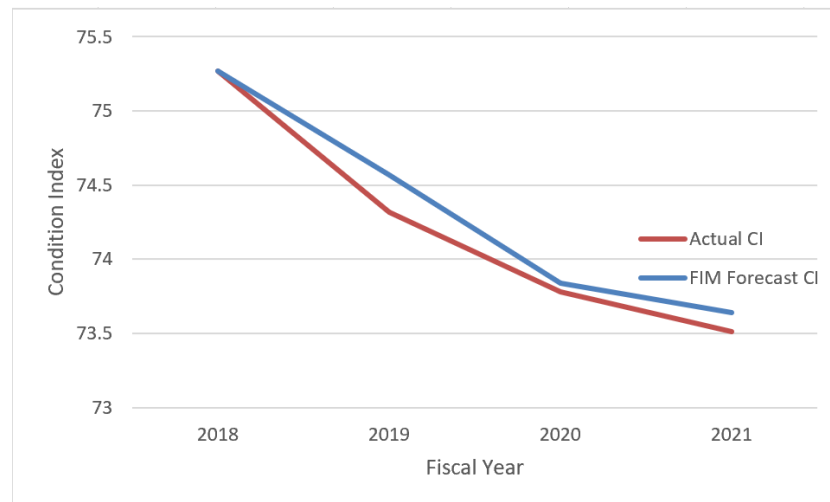
Installation-level Verification
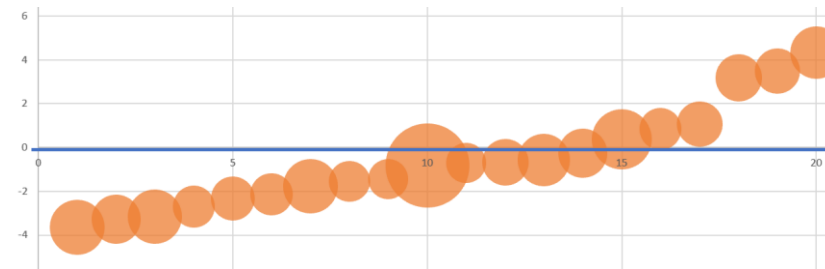
POC Info

Please direct questions, recommendations for new enhancements, and requests for training to:

Sandra Dunn (FRES Program Manager)
Email: sandra.k.dunn4.civ@us.navy.mil
Phone: (757) 262-8294 (DSN 312)