GOVERNMENT - INDUSTRY FORUM

Engineering, Construction, and Facilities Asset Management: A Cultural Revolution

The National Academies, Washington, DC

31 October 2006

611 CES

PRIDE IN PROGRESS

ASSET EVOLUTION

OPTIMAL ASSET MANAGEMENT.

T.E.A.M.S. Total Enterprise Asset Management Solution TM

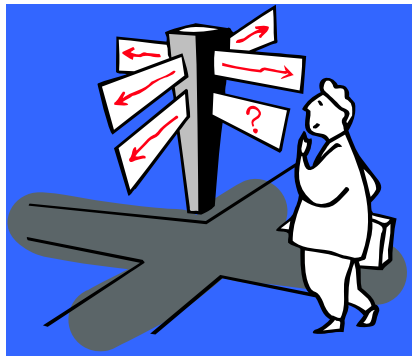
A Cultural Revolution

- Began in 1981…..

  Create a NEW Capital Management Culture

  - What Standard can we afford?
  - What will the next 40 years cost us? Condition?
  - How do we make our current investment last?
  - Given limited funds, What is important?
  - What are the TOTAL COSTS?
  - Have we invested wisely?

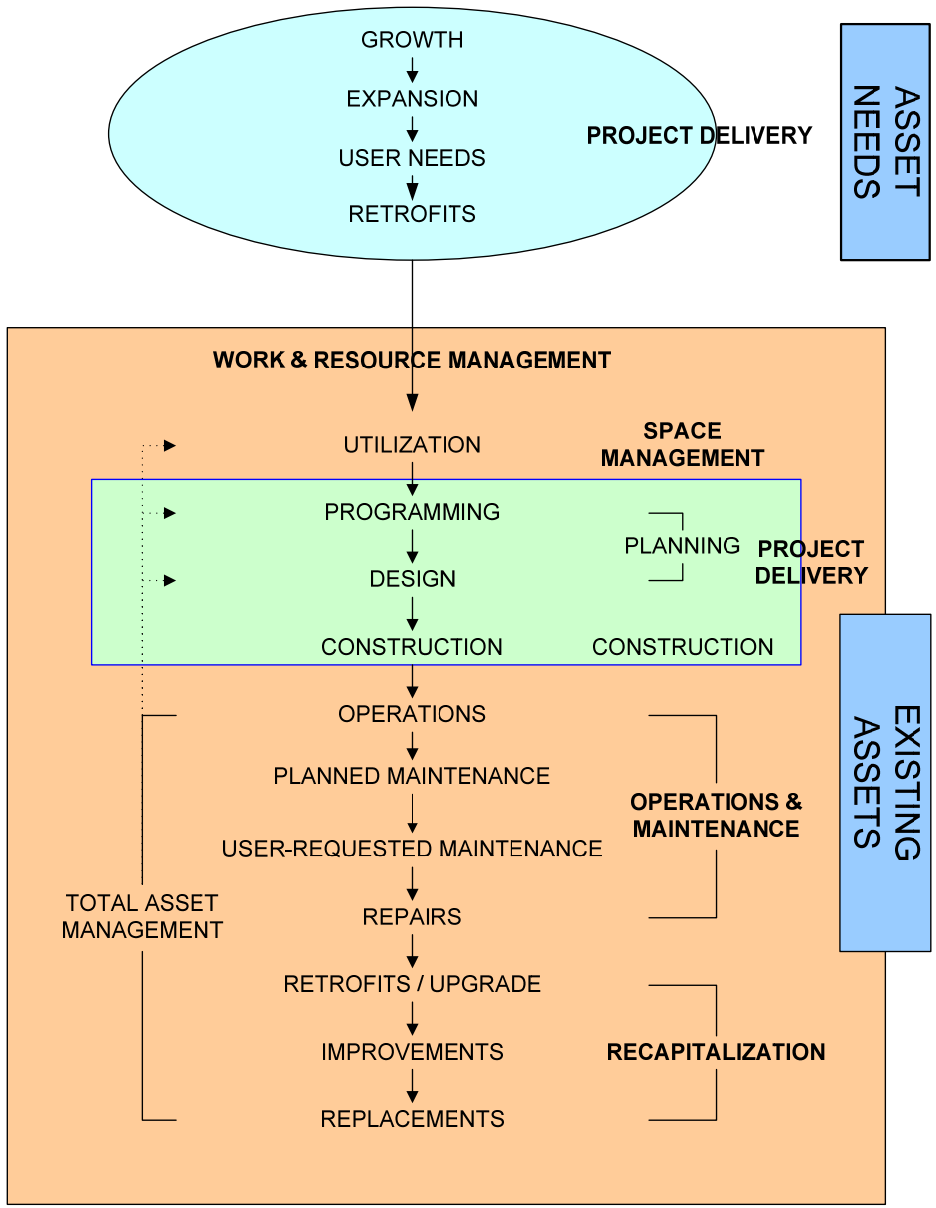
VISION



Asset Management
The Future Paradigm

- ALL Capital assets will be managed HOLISTICALLY
- The NEEDS of the institution will determine and match the asset resource levels
- The STRATEGIC USE of limited resources will be required to match readiness of vision & mission
- The assurance that ALL is being done to MAXIMIZE the USEFUL LIFE of ASSETS is in place
- There is TRUST in what is really needed
- Finding better ways to EFFECTIVELY use assets
- Support services and tools would be SEAMLESS

Total Asset Management
1981



ASSET EVOLUTION
OPTIMAL ASSET MANAGEMENT.

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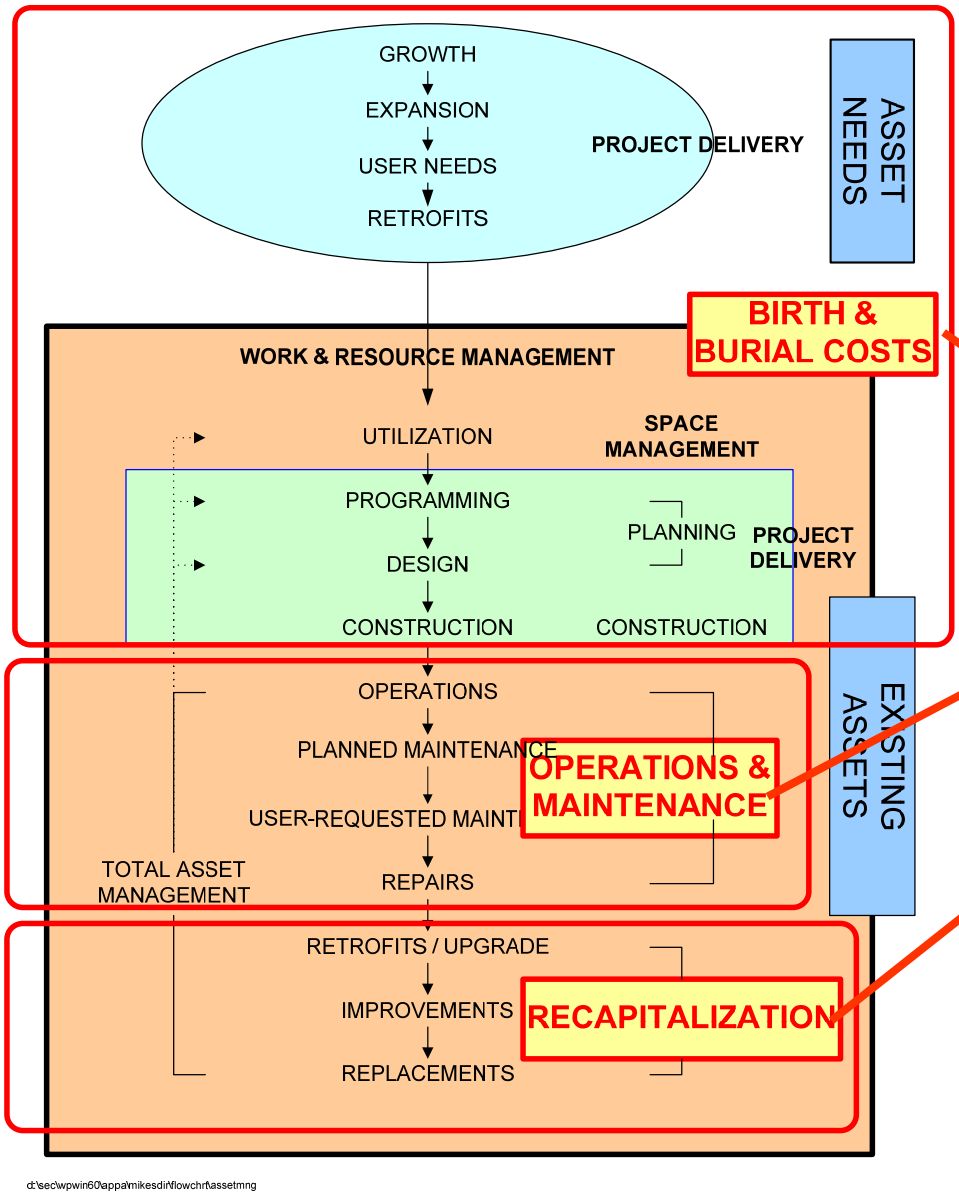
TCO Based

Total Asset Management
1981



T.E.A.M.S
T otal
E nterprise
A sset
M anagement
S olution

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ASSET EVOLUTION
OPTIMAL ASSET MANAGEMENT.

TCO Based

T.E.A.M.S. Vision

Total Enterprise Asset Management Solution

Total Cost of Ownership

Birth & Burial (non-recurring)

cost A	Concept to Bid
cost B	Financing
cost C	Construction/ Install
cost K	Decommission/Demolition/Disposal

Maintenance & Operations (annual recurring)

cost D	Operations
cost E	Planned Maintenance/Routine
cost F	Repairs/ Breakdowns
cost G	Utilities

Recapitalization (periodic recurring)

cost H	Retrofits/ Improvements
cost I	Programmatic Upgrade
cost J	Replacement/ Renewal

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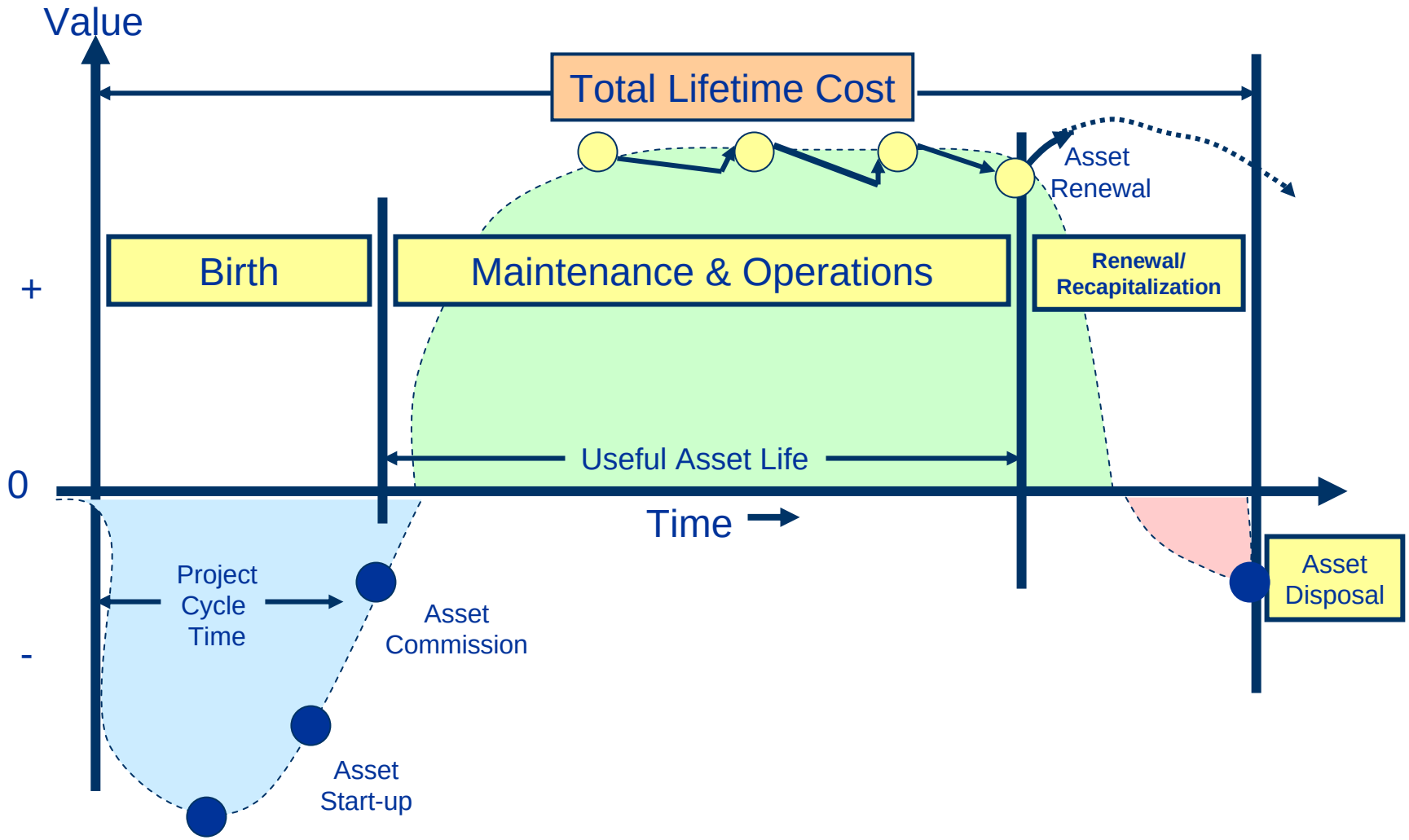
OPTIMAL ASSET MANAGEMENT.

Principle Based

Life Cycle Management



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OPTIMAL ASSET MANAGEMENT.

T.C.O. Based

Asset Assessment Types

Levels

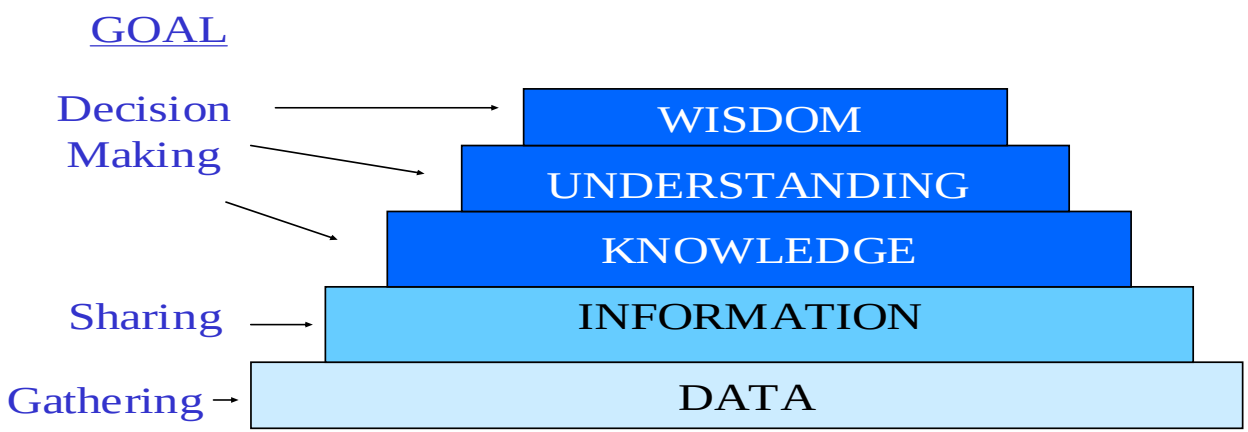
1. No Assessment – No awareness of asset status (Hope for the Best)
2. Breakdown Assessment – Wait until an asset fails; then an assessment needs to be made
3. Parametric Assessment – A statistical analysis of assets in which global projection of resource needs is without specific details
4. General Condition Assessment – A snapshot review of assets that focuses on projects needing improvement
5. Detailed Condition Assessment – A detailed snapshot review of asset condition and projects for the next 3-5 years
6. Life Cycle Assessment – A detailed inventory of assets where lifecycle is tracked and decisions are made on asset useful life
7. Lifetime Assessment – An detailed inventory of assets where all costs are tracked and useful lifecycle decisions are made

Principle Based

Knowledge Management

Knowledge Management is the Goal

Data Maturity Model



A.I.M. - Asset Investment Management

A.I.M. Based

ASSET EVOLUTION
OPTIMAL ASSET MANAGEMENT.

Investment Questions

What Needs to be Asked?

When and Where should we Invest?

Why should we Invest?

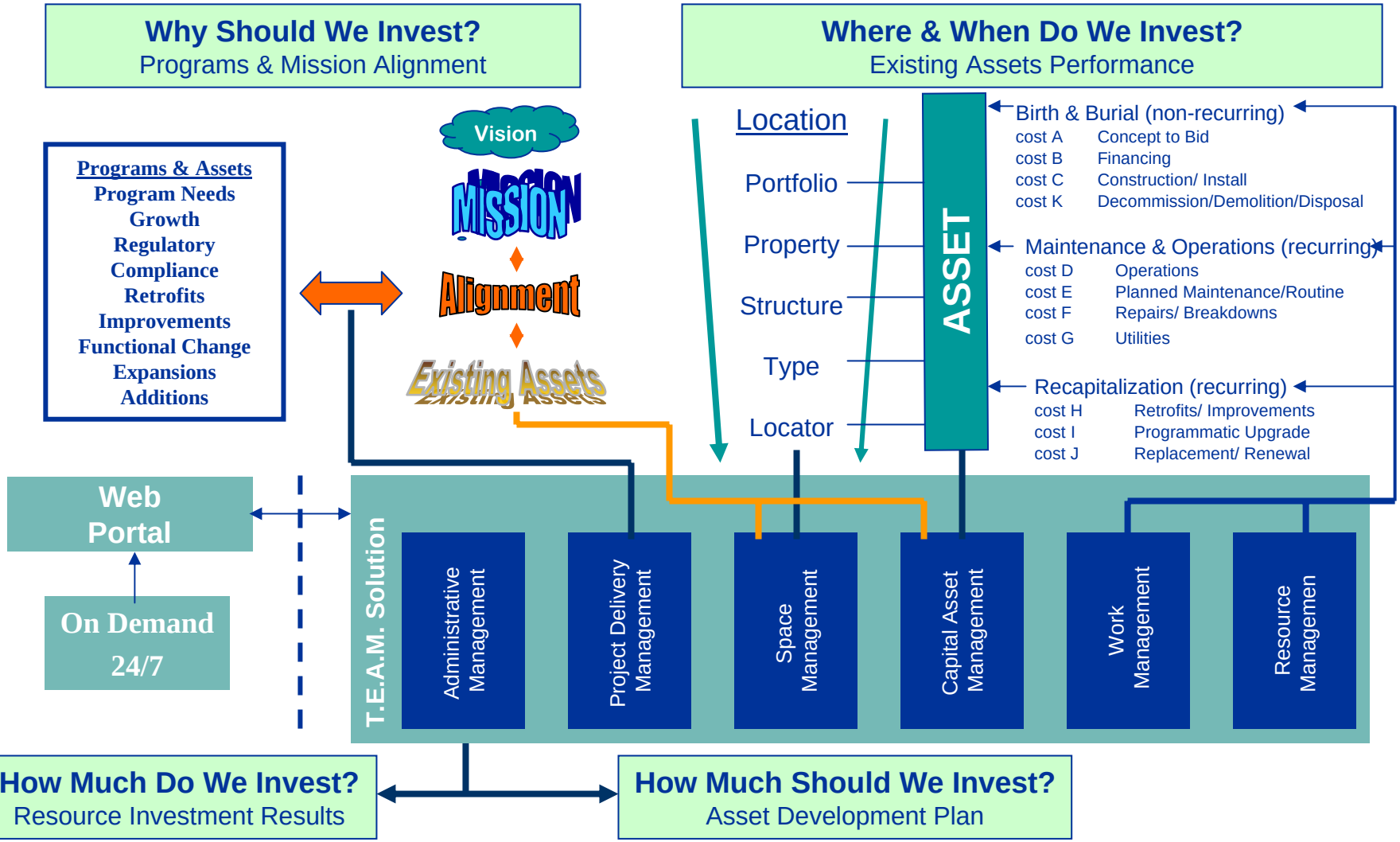
How much do we Invest?

How much should we Invest?

T.E.A.M.S. Based

T.E.A.M. Solution Tool

Administrative Management	**Web Portal and Metrics tracking** **Projections,Measurements Web Portal, etc**
Project Delivery Management	**Track Master Plan & Projects** **Regulatory Compliance, Remodels, Additions, etc**
Space Management	**Location Warehouse,Space Use & Needs** **Space Inventories, Space Assigned, Space Growth, etc.**
Capital Asset Management	**Life-Cycle Management of ALL Assets** **Roofs, Utilities, Flooring, Equipment, etc.**
Work Management	**Tracking Work, PM & Service Requests** **Routine Work, Project Work, PM Work, etc.**
Resource Management	**Tracking Labor and Materials** **Job Cards, Time Cards, Materials Used, etc.**



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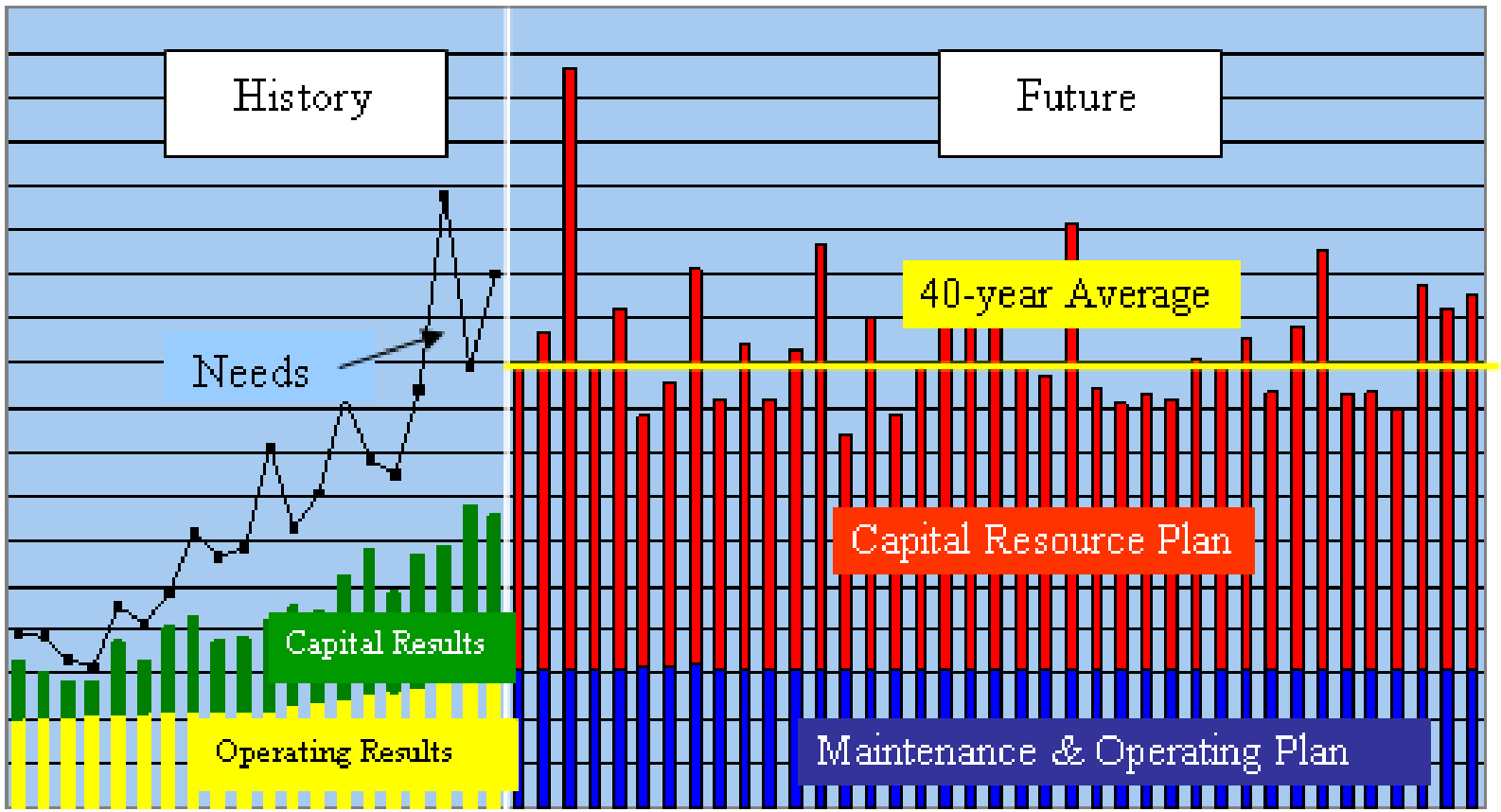
Coaching Based

Coaching for Long-term Success



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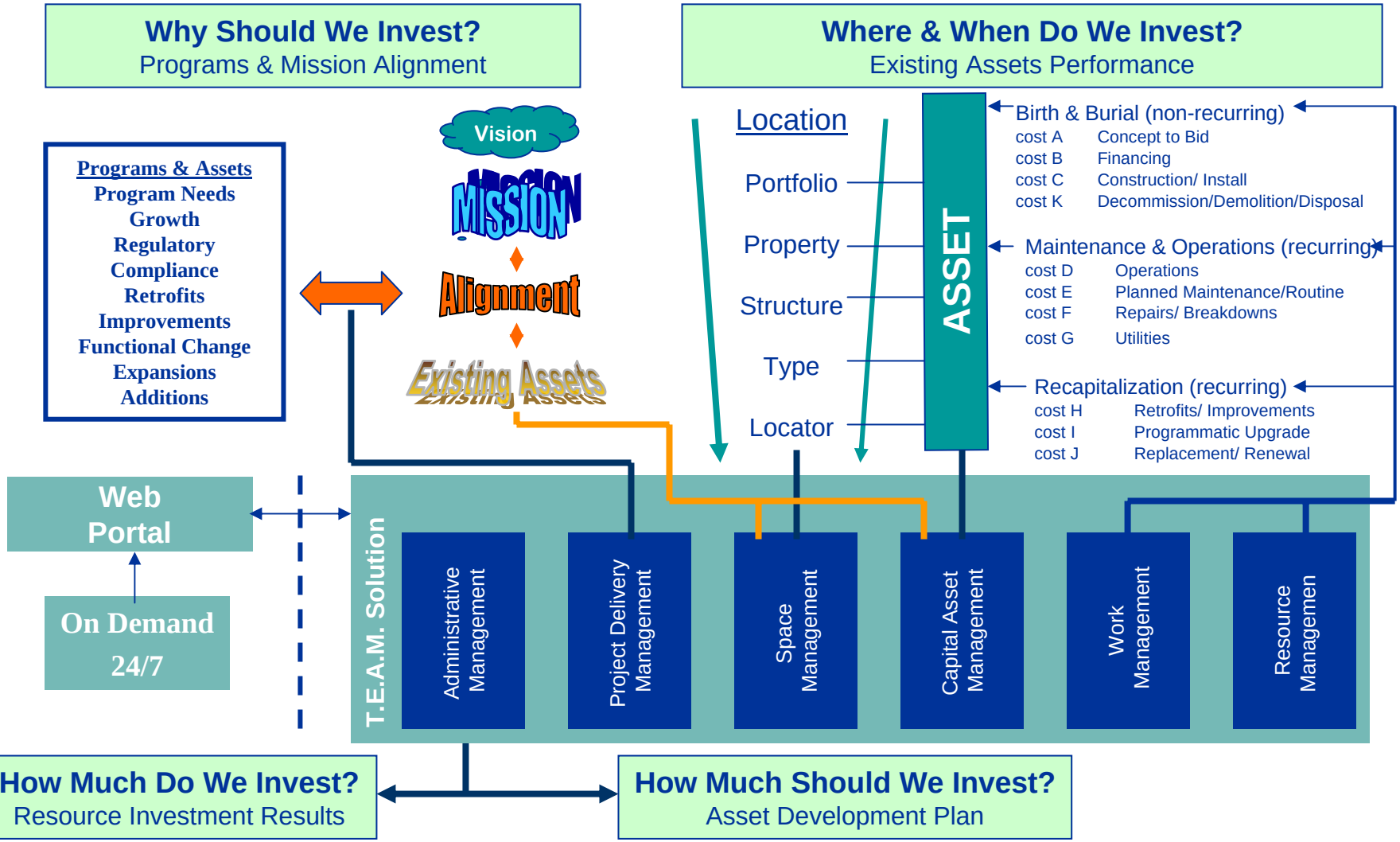
611th Civil Engineer Squadron

Facility Status and Maintenance Challenges



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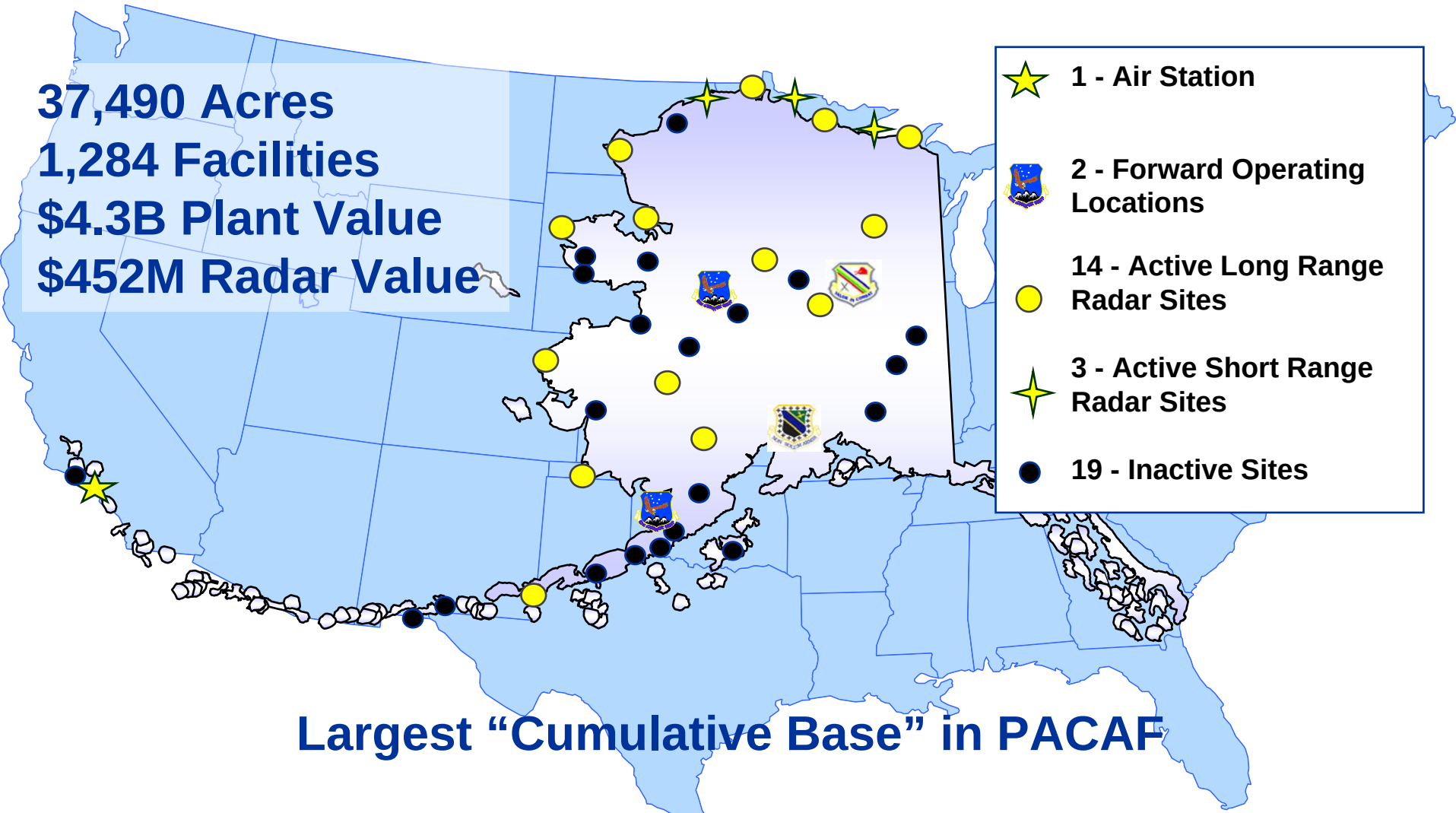
AREA
OF RESPONSIBILITY



Largest "Cumulative Base" in PACAF

Challenge: Climate

- Winds in excess of 100 MPH
- Sea state impacts operations
- Arctic extremes: -80 to +90 deg F
- 35% WX cancellation for airlift missions

- May- Sep: Peak construction season
  - Competition for resources
  - Location cost factor
    - 400% of lower 48
- Special requirements
  - Arctic foundations; Snow/wind loads; Thermal expansion; Seismic design requirements

Bulldozer at Tin City in June

611 ASG IRR Trends

	2001	2002	2003	2004	2005
Maint/Prod	C-1	C-4	C-4	C-4	C-4
RDT&E	N/A	N/A	N/A	C-1	C-1
Supply	C-3	C-4	C-4	C-3	C-3
Medical	C-1	C-1	C-2	C-1	C-1
Admin	C-1	C-3	C-1	C-1	C-1
Utility	C-4	C-4	C-4	C-4	C-4
Comty Sp/MFH	C-4	C-4	C-4	C-4	C-4
Cost To Raise to C-2	**$62M**	**$450M**	**$576M**	**$681M**	**$814 M**