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## EXECUTIVE SUMMARY

### Purpose of the Plan

The Facilities and Environmental Programs Office within the Naval Air Systems Command recognized the need to develop a Corporate Environmental Management Plan to ensure the execution of a TEAM approach toward sound environmental management. This Plan contains the methods we intend to use to help Program Managers (PMAs), competency managers, and site managers to coordinate environmental planning, programming, and budgeting across the TEAM. Executing the Plan will help programs and installations minimize the duplication of their efforts and maximize the leverage of available resources. Ultimately, we can guarantee that the Naval Aviation TEAM maintains a smooth course toward continuous environmental compliance. It is our intention that this Plan presents a framework for measuring how well our TEAM is integrating pollution prevention into the acquisition process. The methods presented in this plan include:

- Defining operational requirements,
- Issuing environmental and pollution prevention policies and procedures to the Command based on stated requirements,
- Designing for the environment (considering environmentally-conscious solutions) that reduce lifecycle costs,
- Improving maintenance and management planning and practices based on the appropriate data analysis,
- Incorporating solutions in the Acquisition Strategy and individual Program Environmental Safety and Health Evaluations (PESHES),
- Reducing cumbersome working practices,
- Reviewing maintenance manual to reduce the references and subsequent use of hazardous materials,
- Developing and implementing new technologies and/or alternative technologies,
- Managing the requirements imposed on the acquisition community by DOD regulation 5000.2, and
- Planning, programming, and procuring affordable environmental control technology and equipment.

The Plan will foster the necessary planning to ensure that corporate resources are secured and appropriately allocated to the actions required to address the TEAM's major environmental issues. The Plan also helps the TEAM recognize that environmental issues are synonymous with issues that threatened operations. Specifically, inefficiencies in Depot manufacturing and repair throughput, organizational and intermediate level maintenance and support, and entry and exit criteria of program milestones create bottlenecks in the acquisition process and potentially threaten mission readiness.

The Corporate Environmental Management Plan provides procedural guidance to support the TEAM's Environmental Strategy by:

- Generating pollution analysis and assessments required to support a toxic chemical inventory reduction as well as hazardous materials and waste reduction,

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- ✍✍ Providing information necessary to perform cost:benefit analyses,
- ✍✍ Formulating an annual environmental R&D budget in support of the acquisition community and the NAVAIR infrastructure based on operational requirements, and
- ✍✍ Generating performance measurements, and reporting on environmental and pollution prevention success stories.

### **The NAVAIR Strategic Investment Plan (SIP)**

While this Plan contains our management methodology, we are in the process of developing a strategic investment plan that will guide the execution of our methods. This Strategic Investment Plan provides details on our efforts to meet the changing demands and priorities that result from a dynamic set of environmental targets. In particular, the overall objectives of the Strategic Investment Plan are to:

- ✍✍ Help the TEAM maintain the necessary structure for linking environmental requirements to operational needs,
- ✍✍ Provide an overview of environmental investments in acquisition targeting hazardous material/hazardous waste reductions,
- ✍✍ Provide a snapshot of newly developed and tested environmental technologies, and
- ✍✍ Highlight planned process improvements and identify hazardous materials management techniques and practices.

Through the implementation of our Strategic Investment Plan, we hope to develop an integrated investment strategy that will achieve the greatest benefit for the most customers. The Strategic Investment Plan will provide us with a baseline for making sound investments that meet NAVAIR environmental and operational goals, regulatory requirements while achieving the greatest return on our investments.

Eventually, we hope that our SIP will contain the research and development programs from other services and government agencies. This integration will allow us to leverage those resources as well as expand the impact of our own resources.

The organization of the SIP mimics the four-phase Acquisition Support Process contained in the NEAT methodology. We hope that the solutions that we have developed and described in the SIP will provide our customers with technologies, methods, and other products required to support the NAVAIR corporate mission.

The SIP will contain a comprehensive review of existing and proposed research and development efforts that address the needs of our customers as outlined in the Technology Needs Survey (TNS).

Over the long term, we hope that this plan will guide the development and transition of new technologies, products, and methods to the field. We believe these efforts will help us all to achieve our environmental and operational goals more expeditiously and efficiently.

Execution of the NEAT methodology will improve coordination of efforts across programs and competencies, provide boundaries for segregating program and installation specific environmental requirements from generic/common TEAM requirements, provide greater regulatory relief by showing a corporate perspective and associated plans, and finally, enhance the TEAM's ability to demonstrate environmental stewardship without sacrificing performance or ability to meet mission requirements.

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The Strategic Investment Plan will result in tangible benefits to Program Executive Officers (PEOs), Program Managers (PMs), site managers and NAVAIR competencies. PEOs can use the plan as a means to assess mitigation measures resulting from their Program Environmental Safety and Health Evaluations (PESHE).

### **Driving Forces**

The Department of the Navy (DoN) is committed to supporting DoD's environmental management policies and goals and achieving demonstrated successes. Our corporate environmental management plan and strategic investment plan provide us with a unique opportunity for protecting our environment and natural resources while reducing costs by doing business more efficiently.

### **NAVAIR 8.4 Mission and Vision**

NAVAIR 8.4 has a mission to provide environmental products and services that allow fleet and acquisition managers to reduce risks, reduce liability, enjoy cost savings, improve industrial processes, and enhance weapon system performance. The following statements complete our vision for the future:

- ☞* We will be the experts for integrating environmental planning and pollution prevention throughout acquisition programs and the systems lifecycle.
- ☞* We will be technical leaders who deliver solutions and technical opportunities to promote cost effective environmental management practices.
- ☞* We are dedicated to excellence and innovation in environmental program management through teamwork and coordination.
- ☞* We are committed to ensuring that our products and services exceed the needs of the fleet and acquisition program managers.
- ☞* We will be recognized as necessary team members that enhance aviation system development, deployment, and sustainment.

The NEAT guide contains our methods for gathering our customer needs, identify appropriate solutions, demonstrating those solutions, and measuring our progress toward our corporate goals. We will use our Strategic Investment Plan to communicate and demonstrate our progress towards our vision.

There are a series of instructions and executive orders (EO's) that require us to do more with less. In response, our field activities are committing greater resources to their environmental programs, including the preparation of management plans, identification and implementation of compliance-related and P2 projects, and tracking of hazardous waste and hazardous material reductions relative to our corporate goals.

### **DoD's Pollution Prevention Policy**

DoD's Pollution Prevention policy requires compliance with Federal, State, and local environmental laws, regulations, and EOs. The policy also addresses reductions in the use of hazardous materials, the generation or release of pollutants, and adverse effects on human health and the environment caused by DoD activities. Lastly, the DoD policy addresses pollution reduction through improvements in energy and water efficiency, the use of alternative fuels, and other activities that improve resource utilization.

### **Executive Orders**

In addition to this policy, there are six separate executive orders that direct other aspects of federal facilities' P2 programs. Implementation of these programs addresses some of the most taxing issues facing the global

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environment, namely, releases of toxic chemicals, exhaustion of natural resources, depletion of the earth's ozone layer, and global warming. Summaries of the executive orders are as follows:

- ✍✍ Executive Order 12856 requires every federal facility to develop a pollution prevention plan by December 31, 1995, including an approach to addressing revisions in subsequent years. The plan must support a strategy to achieve agency-wide reduction goals including 50 percent reductions in the release of hazardous waste and toxic chemicals by December 31, 1999.
- ✍✍ Executive Order 12873 addresses federal acquisition, recycling, and waste prevention by establishing goals for solid waste prevention and recycling, and procurement of environmentally friendly products.
- ✍✍ Executive Order 12902 addresses energy efficiency and water conservation by setting goals for the year 2005 for reduced energy use, reduced reliance on petroleum products, and increased efficiency.
- ✍✍ Executive Order 12843 presents procurement requirements and policies for federal agencies for ozone-depleting substances.
- ✍✍ Executive Order 12844 directs federal facilities to procure and use alternative fueled vehicles, where possible, to reduce toxic and hazardous air pollutants.
- ✍✍ Executive Order 12845 addresses the purchase of energy-efficient computer equipment.
- ✍✍ Executive Order 12898 encourages federal facilities to document potential environmental impacts in environmental justice areas and target these impacts for reduction through pollution prevention.

EO 12856 requires that all federal agencies establish baselines and reduction goals for toxic chemicals listed in Section 313 of the Emergency Planning and Community Right-to-Know Act (EPCRA). The baseline must include all toxic chemical releases that are reportable under the EPCRA Section 313. Other toxic pollutants (e.g., hazardous waste) may be used as additional measurement parameters; however, toxic chemical releases, at a minimum, must be reduced by 50 percent.

***Navy Instruction OPNAV 5090.1b***

Navy Instruction OPNAV 5090.1b (1 Nov 94) requires that every shore installation develop and implement a P2 program that contains quantitative P2 goals. In addition, OPNAV 5090.1b directs each claimant to obtain a 50 percent reduction in total reportable toxic releases and off-site transfers. To ensure NAVAIR's attainment of this goal, each installation that is covered under the EPCRA Toxics Release Inventory (TRI) needs to adopt the same goal. For facilities that are below TRI reporting requirements, Navy strategy requires a minimum goal of 50 percent reduction in hazardous waste. In addition, facilities are encouraged to adopt the Department of the Navy (DoN) Measures of Merit (MoM) for their reduction goals. DoD MoM's were developed by the Defense Environmental Security Council (DESC) Committees in six functional areas, including pollution prevention. The MoM's are used to:

- ✍✍ Define environmental security goals;
- ✍✍ Measure how well those goals are being achieved; and
- ✍✍ Assess program effectiveness.

The Naval Aviation Systems Team's Environmental Program Managers (PMs) are working hard to test and evaluate P2 technologies and to implement projects that will enable NAVAIR to achieve its corporate environmental management goals. The facilities are actively pursuing opportunities for waste reduction and are achieving significant progress. NAVAIR 8.4's role is to support the research and validation of P2

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technologies and implement successful options at all NAVAIR facilities that will benefit from the project. In addition, NAVAIR needs to annually collect each facility's data in sufficient detail to obtain a snapshot of progress relative to the baseline year. NAVAIR's P2 data collection activities are directed towards the implementation of successful P2 projects and tracking of progress towards the overall reduction goals. The data collection also will support future regulatory requirements and establish NAVAIR and its facilities among the leaders in federal facility pollution prevention.

***DoD 5000.2R and SECNAVINST 5000.2B***

DoD 5000.2R and SECNAVINST 5000.2B direct that all weapon system acquisition programs shall be conducted in accordance with applicable Federal, state, and local environmental laws and regulations, Executive Orders (EO), treaties and agreements. These instructions also stipulate that a Programmatic Environmental, Safety, and Health (ESH) Evaluation be initiated at the earliest possible time and be updated throughout the system acquisition life-cycle. The evaluation describes the program strategy for meeting ESH requirements, establishes responsibilities, and identifies how progress will be tracked. OPNAVINST 5090.1B provides Navy policy, identifies key statutory and regulatory requirements, provides guidance and procedures for implementing legally compliant environmental management actions and preparing NEPA compliance documentation, and assigns responsibilities for management of Navy programs.

**Role of the AEPST**



The Acquisition Environmental Product Support Team (AEPST) was formed to incorporate sound environmental planning and pollution prevention doctrine into the lifecycle requirements of TEAM programs. The AEPST manages the corporate environmental resources necessary to execute this Corporate Environmental Management Plan and provides a forum for the exchange of corporate environmental issues across the NAVAIR TEAM.

Specific objectives of the AEPST include:

- ▬ Planning, communicating, and providing corporate environmental policy to guide Program Managers in the development of acquisition strategies related to environmental, safety, and health issues,
- ▬ Providing a forum to address environmental issues across the NAVAIR team, and
- ▬ Transferring P2 successes across the NAVAIR team.

Action officers were designated in each of NAVAIR's eight competencies and selected program offices. Designated action officers were directed to meet every other month and discuss issues confronting the acquisition community. AEPST action officers developed this Plan and the associated targets to organize, coordinate, and communicate the actions they take to support the acquisition community. Responsibilities of the action officers include:

- ▬ Coordinating competency environmental roles, responsibilities, products, and services;
- ▬ Conveying environmental information (e.g. impending regulations and proposed legislation, affordable readiness issues, pollution prevention technology opportunities, etc.) into competencies and programs; and
- ▬ Identifying and addressing other major corporate issues facing the command.

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The AEPST's charter provides a clear and concise statement of the group's purpose. The ratified charter will be used together with the Corporate Environmental Management Plan and our Strategic Investment Plan to help the AEPST maintain its focus on the primary challenges facing the aviation community.

The AEPST's success and the relevance of this document are dependent on the continued participation and support of PEO and PMA representatives and all NAVAIR competencies.

The AEPST relies on every member of the TEAM to:

1. Identify emerging operational requirements,
2. Pass relevant issues along to their respective AEPST action officer,
3. Structure the development of new technologies or alternative solutions, and
4. Help transition the right technologies to the right platforms.

***AEPST Action Officers***

The following individuals represent the eight NAVAIR competencies and selected programs. They contribute regularly to the AEPST agendas and address action items as appropriate.

*Table 1. AEPST Action Officers*

<b>Org.</b>	<b>Who</b>	<b>Phone Number</b>	<b>e-mail Address</b>
AIR-1.0	Jackie Mercer	(301) 757-6624	Mercerjy@navair.navy.mil
AIR-2.0	Marian Murdock	(301) 757-6564	Murdockmg@navair.navy.mil
AIR-3.0	Kim Gudmundson	(301) 757-3097	Gudmundsonk@navair.navy.mil
AIR-4.0	Steve Hartle	(301) 342-8006	Hartlesj@navair.navy.mil
AIR-5.0	Ron Rolph	(301) 757-2253	Rolphrp@navair.navy.mil
AIR-6.0	Lorraine Wass	(301) 757-3063	Wasslj@navair.navy.mil
AIR-7.0	Tom Lundstrom	(301) 757-5980	Lundstromtj@navair.navy.mil
	Kelly Burdick	(301) 342-7512 x19	Burdickkm@navair.navy.mil
AIR-8.0	Herman Varmall	(301) 757-2137	Varmallha@navair.navy.mil
	(Chair)		Trollingerjd@navair.navy.mil
	Doug Trollinger	(301) 757-2135	
PEO(A)	Douglas Isleib	(301) 757-5582	Isleibdr@navair.navy.mil
PEO(T)	Chris Evans	(301) 757-7164	Evanscl@navair.navy.mil
PEO(CU)	Malinda Pagett	(301) 757-5870	Pagettmg@navair.navy.mil
LMTC(E)	Dave Brock	(904) 542-0516 x122	brock.psd@navair.navy.mil
NFESC	Winston deMonsabert	(703) 602-2849	Demonsabertwr @navair.navy.mil

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**Role of the Lead Maintenance Technology Center for the Environment (LMTCE) Working Integrated Product Team (WIPT)**

The Lead Maintenance Technology Center for the Environment (LMTCE) is a NAVAIR corporate resource residing at NADEP Jacksonville as a functional element of the NADEP Materials Engineering Laboratory. The LMTCE serves as a focal point for identifying and fulfilling NAVAIR requirements for compliance with environmental regulations through the use of pollution prevention techniques.

The LMTCE has established a Working Integrated Product Team (WIPT) with representation from NAVAIR as well as several NAVAIR industrial facilities. Many of the LMTCE WIPT members coordinate pollution prevention efforts at their specific activity. The LMTCE WIPT members are listed in the figure below.



The LMTCE WIPT executes the ESH planning process at the corporate level. The primary objectives of the ESH planning process and the LMTCE WIPT are to:

- Validate, prioritize, and facilitate the analysis of NAVAIR ESH needs (supporting Phases I and II of the Acquisition Support Process),
- Identify existing government and/or commercial technology(ies) that currently address ESH needs (material and nonmaterial solutions),
- Identify plans for developing technology where required or where present efforts are not adequately addressing the need.
- Communicate solution(s) information to the ESH need(s) originator.

**Our Roadmap for the Transition of Environmental Solutions**

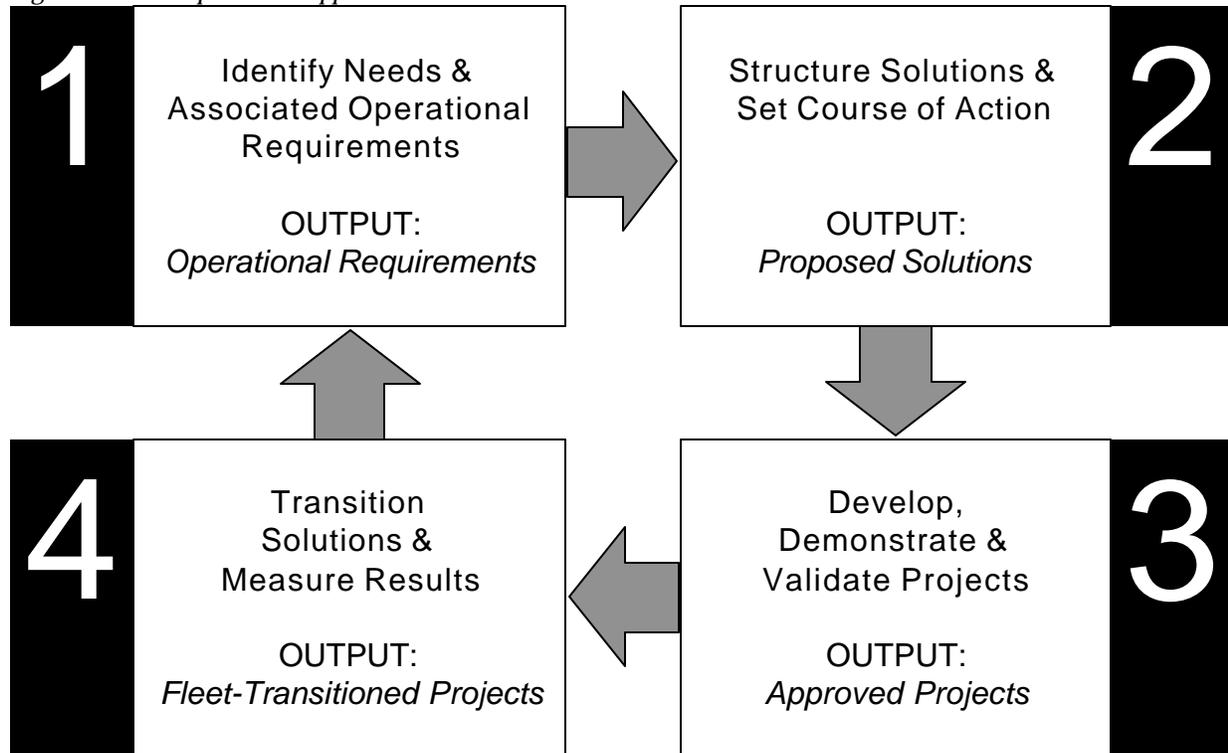
In the past, the research and development community followed a loosely-structured process for ensuring that the right technologies were developed and transitioned to the Fleet in a timely fashion. This process was somewhat haphazard, marginally efficient, and difficult to quantify. This Corporate Environmental Management Plan contains a four-phased process to help guide our efforts toward the successful transition

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of those technologies and management practices necessary to relieve environmental burdens from the Fleet while ensuring a structured NAVAIR approach to environmental management.

As a group, we identify and quantify needs (or requirements), ensure that the appropriate solutions are developed, and then demonstrate and validate those solutions before ensuring their successful transition to the Fleet. The entire cycle repeats (at the beginning of each fiscal year) once we revisit our requirements to identify the new or modified technologies that might be warranted. Figure 1 lays out the basic roadmap of our acquisition support process.<sup>1</sup>

Figure 1. *The Acquisition Support Process*



For the purposes of the Corporate Environmental Management Plan, the AEPST adopted this four-phased process to ensure environmental planning is an integrated part of the acquisition process. We call it the Acquisition Support Process.

**NAVAIR's Acquisition Support Process**

*The Corporate Environmental Management Plan is intended to help organize the AEPST's support to the naval aviation community. This approach is dynamic and not necessarily sequential. Circumstances may result in some problems being addressed independently while other problems are coordinated for purposes of efficiency. Generally, all support provided by the AEPST to the acquisition community will fall into the four phases that are described by the Acquisition Support Process.*

<sup>1</sup> This Acquisition Support Process is fashioned after the technology insertion process presented in the *Xchange Magazine*, Spring 1997, on pages 9-10.

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**Phase 1: Identify Needs & Associated Operational Requirements**

*GOAL: The AEPST will use the Technology Needs Survey (TNS) to identify, quantify and rank the operational and environmental problems that are of greatest significance to the aviation community.<sup>2</sup> NAVAIR's Acquisition Support Team (AIR-8.4) within the Facilities and Environmental Programs Office tasked the Lead Maintenance Technology Center for the Environment (LMTCE) to implement the Technology Needs Survey (TNS). LMTCE is using the TNS to assemble a list of technology needs from our customers through a well-recognized, structured methodology.*

The intention of the Technology Needs Survey is to:

1. Ensure that user ESH requirements (needs) are collected and documented,
2. Help our customers communicate the relative importance of their needs, and
3. Merge the identified needs into the Acquisition Support Process as outlined in this plan.

**Phase 2: Structure Solutions & Set Course of Action**

*GOAL: The AEPST will assemble a set of solutions to the operational requirements developed in the first phase. The AEPST will assemble the most feasible approach for addressing the operational needs identified through the implementation of the TNS in Phase 1. This will require AEPST action officers to solicit their competencies for proposed solutions to common operational requirements. The AEPST will assemble the most feasible approaches into an execution plan that includes the associated resources, policies, and priorities. The AEPST will solicit from affected programs and installations to address those needs that will impact multiple platforms or sites.<sup>3</sup> The results of the TNS will be documented in our Strategic Investment Plan.*

**Phase 3: Develop, Demonstrate and Validate Projects**

*GOAL: The AEPST will sponsor the projects defined in Phase 2 that will have the greatest benefit to the acquisition community. These efforts will be executed through the use of currently programmed environmental resources, including the AIR-8.4 pollution prevention Operation and Maintenance - Navy (OM&N) line, the W2210 Research, Development, Test, and Evaluation (RDT&E) line, and the Navy Working Capital Fund (NWCF) environmental investments.*

In particular, NAVAIR established the W2210 project line to develop, demonstrate and evaluate environmental technologies that meet the needs of program and site managers and the fleet.

In addition, other organizations have developed their own technology demonstration programs that the AEPST will leverage to meet the needs of the aviation community.<sup>4</sup>

Although many of these solutions involve the development of new technologies, some answers to NAVAIR's problems may take the form of enhanced management practices, modified industrial processes, or the procurement of new equipment. In particular, PEOs and PMAs may include PESHE preparation, environmental language for contracts and statements of work, as well as the development of Hazardous

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<sup>2</sup> The Corporate Environmental Management Plan provides a preliminary statement of the problems that compromise our mission and threaten our readiness in the section entitled, "Phase 1: Identify Needs & Associated Operational Requirements."

<sup>3</sup> AIR-8.4 shall be responsible for ensuring that resources are secured, programmed, or budgeted.

<sup>4</sup> Details on the ongoing development of solutions is included in the section of this document entitled, "Phase 3: Develop, Demonstrate and Validate Projects."

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Materials Management Plans (HMMPs) among their top environmental requirements. If properly coordinated, these different types of solutions can address the collective need of the aviation community.

**Phase 4: Transition Solutions and Measure Results**

*GOAL: The AEPST will work to ensure the successful transition of solutions to the Fleet. This transition will rely on the ongoing commitment from program, activity, and fleet managers to ensure that newly-developed solutions are programmed for implementation into new system designs and fielded platforms. This also will involve preparations for the uniform incorporation of solutions into the operation of NAVAIR installations. Program and installations should utilize existing processes as a source to transition Phase 3 projects to the Fleet.<sup>5</sup> Since lead time is a critical concern, documents such as the PESHE, facility P2 Plans, the NEAT, and the Strategic Investment Plan should be used to identify necessary programming and budgeting requirements.*

To ensure the success of the Acquisition Support Process, program, activity, and fleet managers should continuously feed the AEPST with their individual requirements (Phase 1) and then budget in the out-years to guarantee the successful transition of appropriate solutions to the Fleet.

During the fourth phase of the Acquisition Support Process, the AEPST will assess the environmental impacts of the actions taken to address operational requirements in Phase 1. *As part of this evaluation, the AEPST will set performance standards that will be used to assess progress across the TEAM.<sup>6</sup> We must also review the appropriate Authorized Use Lists (AULs), hazardous materials inventory and usage data as well as information on the cost:benefit of a particular project.*

**An Overview of the Acquisition Support Process**

Table 2 on the following page provides a summary of the details of the Acquisition Support Process with special emphasis on the implementation of each phase. Table 3 provides a summary of NAVAIR's current environmental acquisition targets.

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<sup>5</sup> These processes include Engineering Change Proposals (ECPs), CAPCOM and Navy Working Capital Fund (NWCF).

<sup>6</sup> Reasonable approaches for evaluating the impact of a project on the acquisition community will include measuring toxic chemicals released, hazardous waste generated, and hazardous materials used by various platforms.

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*Table 2. The Acquisition Support Process*

<b>No.</b>	<b>Phase</b>	<b>What</b>	<b>How</b>	<b>Resources Required</b>	<b>Frequency</b>
<b>1</b>	<b>Identify Needs &amp; Associated Operational Requirements</b>	<del>del</del> Identify environmental, safety, and health needs.	<del>del</del> Institute Technology Needs Survey (TNS) to assemble requirements from programs facility, and fleet managers.	<del>del</del> NAVAIR O&MN resources	Biennially
		<del>del</del> Identify and describe associated operational requirements.	<del>del</del> Maintain database to conduct necessary analyses.	<del>del</del> Collection of operational requirements by AEPST through TNS	
<b>2</b>	<b>Structure Solutions &amp; Set Course of Action</b>	<del>del</del> Propose and organize an appropriate set of solutions to address ranked operational requirements.	<del>del</del> Conduct analyses to determine most feasible approach.	<del>del</del> NAVAIR 8.4 P2 database	Annually
			<del>del</del> Construct and use project template.	<del>del</del> Resources required to conduct customer review	
			<del>del</del> Conduct working session with AEPST action officers.		
<b>3</b>	<b>Develop, Demonstrate and Validate Projects</b>	<del>del</del> Sponsor projects that best meet operational requirements.	<del>del</del> Execute W2210 project line.	<del>del</del> W2210 Project Line	3-5 years
			<del>del</del> Coordinate with other technology demonstration programs.	<del>del</del> Other technology demonstration programs (SBIR, SERDP, RDT&E)	
			<del>del</del> Support equipment procurement and modification of management practices.	<del>del</del> Other resources (PPEP, CAPCOM, etc.)	
<b>4</b>	<b>Transition Solutions and Measure Results</b>	<del>del</del> Prepare program and facilities for successful incorporation of solutions.	<del>del</del> Effective use of Engineering Change Proposals.	<del>del</del> Navy Working Capital Fund (NWCF)	Annually (or more frequent)
			<del>del</del> Involve program and site managers in phases 1, 2, and 3.	<del>del</del> DoD Measures of Merit <del>del</del> DoD project scoring and ranking methodologies	

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**A Look at NAVAIR's First Set of Environmental Acquisition Targets**

The Corporate Environmental Management Plan includes a set of targets where the AEPST will concentrate during the first implementation of the Acquisition Support Process. These preliminary targets were based on the hazardous waste and hazardous materials data available at the time. A more accurate picture of the NAVAIR Environmental Acquisition Targets will emerge once the results of our TNS are compiled and analyzed.

The tables on the following pages will be updated as solutions are developed and successfully transitioned to the Fleet. Table 2 provides a first glimpse at the character of NAVAIR's challenges that the AEPST must evaluate and transform into operational requirements.

These tables contain some large-volume toxic chemical and hazardous wastes that indicate opportunities for significant reduction. These data may be used together with information from other sources including program evaluations, facility P2 plans, military specification (mil-spec) reviews, and program office requirements to quantify NAVAIR's environmental acquisition targets. Once the AEPST has identified the problems facing the aviation community, part of the solution involves assessing the complexity and extent of the need.

The NAVAIR ESH Technology Needs Survey identified a total of 89 customer/user Needs. The individual Needs are divided by category into the groupings of High, Medium, and Low. The ranking break points are based on roughly the top one-third as ranked High, next one-third as Medium, and the remaining third as Low. A detailed breakout of these requirements by priority is included in the NAVAIR Environmental, Occupational Safety and Health FY98 Technology Needs Survey (TNS). Groupings are based on the numerical ranking from the information provided by the customer and subsequent AEPST review. The highest ranking set of NAVAIR Environmental Acquisition Targets is provided in the table on the following pages.

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*Table 3. NAVAIR's First Set of Environmental Acquisition Targets (Highest Ranking Needs From the Technology Needs Survey)*

No.	Rank	ID number	Need
1.	46.31	NA701-98	We need an environmentally sound aircraft engine washing System.
2.	43.45	NA130-98	We need to reduce TRI emissions and hazardous waste disposal caused by Cadmium Plating by implementing non-hazardous alternative processes and materials for plating and allied surface treatments.
3.	40.94	NA703-98	SCW-1 has a need for a way to recycle the deicer fluid (propylene glycol & water, 50/50) used to de-ice the airplanes during the winter months.
4.	40.94	NA506-98	The Navy requires a better method to de-ice aircraft that will minimize the amount of contaminants while maintaining critical de-icing/ant-icing requirements.
5.	40.38	NA133-98	We need alternatives to chromate conversion coat treatment on cadmium plating replacements.
6.	38.55	NA110-98	The Depot needs to minimize environmental and worker health and safety hazards during fabrication and repair operations involving materials joining processes.
7.	38.07	NA103-98	NAVAIR needs to continue to identify and qualify environmentally friendly chemical paint remover candidates for the replacement of methylene chloride based technologies.
8.	38.07	NA201-98	We need to eliminate the use of Methylene Chloride paint stripper on engine cans.
9.	37.87	NA107-98	The Depot needs to continually pursue more environmentally friendly and worker-safe paint removal methods.
10.	36.74	NA501-98	We need to provide for the deicing of roads without the use of salt and sand.
11.	35.57	NA409-98	NAVAIR needs a replacement for methylene chloride in the depainting process.
12.	34.81	NA215-98	We need a more environmentally friendly process for the composite repair metal etching process that currently uses Pasa-Jell.
13.	34.88	NA601-98	We need a replacement of on-board Halon 1301 portable fire extinguishers.
14.	34.72	NA209-98	We need a study, that addresses all aspects of organic coating systems, bringing together both sides of the coating issue, performance and removal.
15.	34.06	NA206-98	We need to eliminate/reduce solvents emitted into atmosphere during the production of magnesium-fueled countermeasures.

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*Table 3 (Cont.) NAVAIR's First Set of Environmental Acquisition Targets (Highest Ranking Needs From the Technology Needs Survey*

No.	Rank	ID number	Need
16.	33.82	NA116-98	The Depot needs to have a method of removing Al <sub>2</sub> O <sub>3</sub> from the waste stream.
17.	33.59	NA504-98	We need engine emission reduction technology for fighter aircraft when operating.
18.	32.74	NA604-98	We require a replacement for the ODS Mil-C-81302, CFC 113, as called out in NAVAIR 13-1-6.4, Aviation-Crew Systems Oxygen Equipment technical manual.
19.	32.18	NA508-98	We need to bring steam catapult discharge into compliance with OPNAV 5090.
20.	31.99	NA503-98	NAVAIR needs to evaluate the possible environmental and safety concerns of HFC-125 exposed to heated surfaces (above 302 degrees F) and its possible decomposition into a toxic substance.
21.	31.82	NA126-98	We need to reduce emissions from pre-cleaning prior to painting operations.
22.	31.62	NA704-98	We need to eliminate materials triggering Toxic Release Inventory (TRI) Form R reporting.
23.	30.72	NA211-98	We need a Hand Held Paint Removal System.
24.	30.72	NA207-98	We need an effective, efficient, environmentally acceptable method of depainting large cargo-type aircraft.
25.	30.72	NA202-98	We need to reduce TRI emissions and Hazardous waste disposal produced during chrome plating.
26.	30.72	NA101-98	We need an acceptable alternative to cadmium plate and a reliable method of identifying parts, that are cadmium plated so the hazards of cadmium can be effectively communicated and controlled.
27.	30.72	NA102-98	We need an acceptable alternative in identifying materials in the supply system that meet Health and Safety, and Environmental needs and requirements.
28.	30.72	NA109-98	Plastic media blasting (PMB) has become a mainstay as a primary component paint removal technique. However, the crack closure potential on light metal alloys often limits its use prior to fluorescent penetrant inspection.
29.	30.72	NA112-98	We need a waterborne polyurethane topcoat material to reduce hazardous solvent emissions from standard solvent based polyurethane topcoats used during aircraft painting processes.
30.	30.72	NA114-98	The Navy and Marine Corps need an approved alternative to chromated paint primers for aircraft.
31.	30.72	NA131-98	We need to reduce TRI emissions and hazardous waste disposal resulting from applying and removing high temperature coatings on aircraft engines by implementing non-hazardous alternative processes and materials for plating and allied surface treatments.
32.	30.72	NA302-98	The Navy needs an approved material alternative(s) to chromated paint primers for aircraft.

The NAVAIR ESH Technology Needs Survey represents the first step of the ESH

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Acquisition Support Process to establish customer/user-identified ESH Needs. The LMTCE WIPT will continue to be refined and expanded the Needs through ongoing interaction with the fleet. The results of this NAVAIR ESH Technology Needs Survey will be evaluated by the NAVAIR TEAM to determine which Needs can be satisfied by off the shelf technology or ongoing programs and which Needs require new RD&A programs. Based on this evaluation a NAVAIR comprehensive Strategic Plan will be developed describing programs that address customer/user needs. Participation of the customer/user during this process has been and will continue to be vital. The LMTCE WIPT will maintain a strong interaction with the customer during the development of the investment strategy to provide feedback. Feedback will take several forms. One is the performance of Need Assessment Summaries (NAS). The NAS studies evaluate each Need to define the Technology Need, and provide a snapshot of solutions available to aid in resolving the Need. Currently NAS studies are being conducted on 10 technology areas, covering 16 Technology Needs. This is the first step in documenting the solution plan with the aid of the end-user/customer. The LMTCE WIPT will maintain a strong interaction with the customer/user during the development of the investment strategy to provide feedback based on the Acquisition Support Process. This will result in transforming customer Needs into an investment strategy mutually agreed upon by the customer and the technology development community.

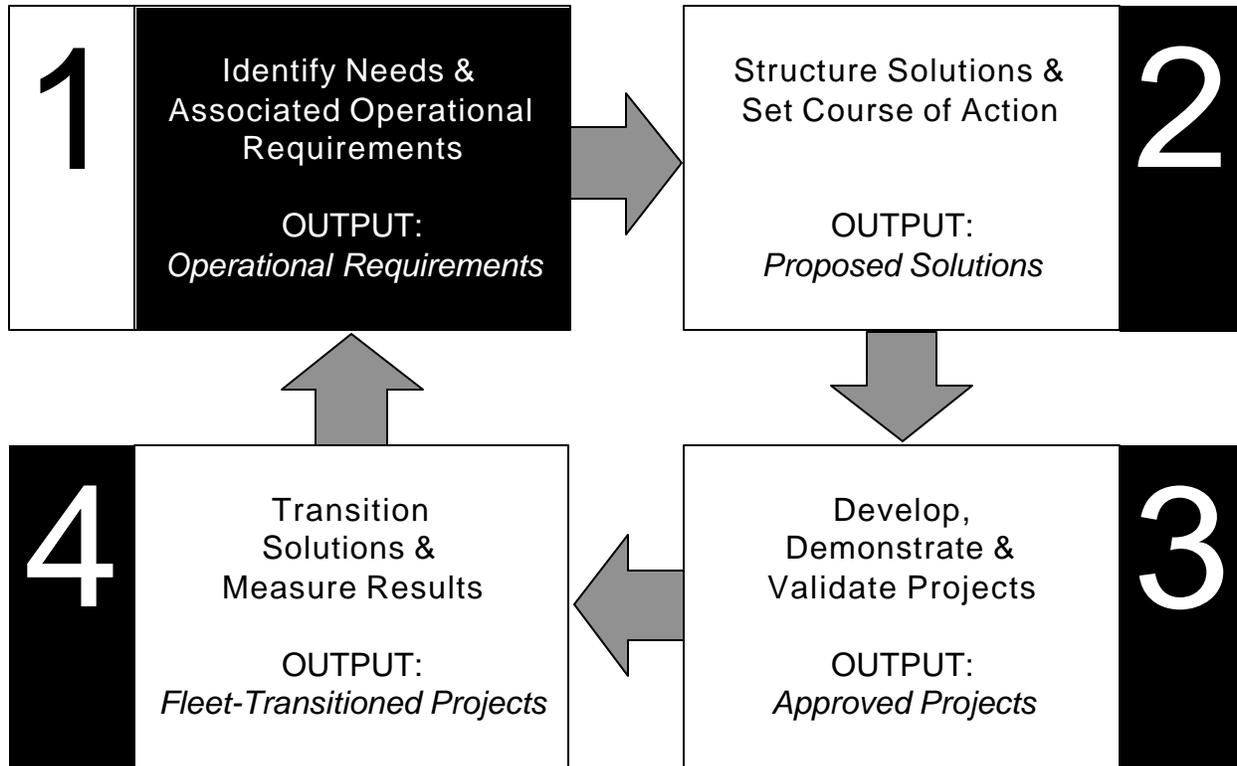
### **How to Use This Plan**

This Plan maintains a statement of NAVAIR's requirements as derived from the Technology Needs Survey (TNS) instituted and completed in FY98. These are the needs of the aviation community that NAVAIR will target for action. This Plan also contains a description of the technologies that NAVAIR is developing, and other actions NAVAIR is taking to address operational challenges. *We intend for the Corporate Environmental Management Plan to be the primary mechanism to ensure that the TEAM integrates environmental and pollution prevention business decisions early in the acquisition process and, thus ensure a constant state of environmental compliance.*

The Plan also will help the manager aviation community coordinate its efforts and minimize redundancies wherever possible. In particular, program, fleet and field activity managers should use the Plan for the following purposes to:

- Budget for the transition of pollution prevention technologies applicable to their programs,*
- Establish an operational benchmark for preparing PESHEs,*
- Understand the TEAM's corporate perspective to contractors, manufacturers, developers, and the general public,*
- Leverage environmental expertise across NAVAIR competencies for the members of their Integrated Product Teams (IPT),*
- Adopt program-specific targets,*
- Review the proposed list of solutions to ensure that individual program needs are represented,*
- Incorporate those solutions already developed and available for transition to the Fleet (where appropriate), and*
- Provide supplemental requirements to the AEPST (if necessary).*

## PHASE 1. IDENTIFY NEEDS & ASSOCIATED OPERATIONAL REQUIREMENTS



GOAL: The AEPST will use the Technology Needs Survey (TNS) to identify, quantify and rank the operational and environmental needs that are of greatest significance to the aviation community.

Historically, NAVAIR has tried to equate environmental problems with operational imperatives - two objectives that are not necessarily synonymous. Not every environmental problem is perceived as threatening NAVAIR's mission readiness. *During this first phase of the Acquisition Support Process, the AEPST will use the Technology Needs Survey (TNS) to construct a list of operational requirements relevant to program and site managers, derived from the most significant environmental problems.* This version of the Corporate Environmental Management Plan contains a preliminary statement of the environmental problems facing the TEAM. The crucial next step in Phase 1 to translate those environmental problems into operational deficiencies or requirements that program and site managers must address. The AEPST must then identify the associated operational requirements and quantify the potential impact on the acquisition community.

A number of events can trigger a new requirement or create a new challenge for NAVAIR. New environmental regulations, anticipated changes in environmental regulations and inefficient-as-designed industrial processes can all present NAVAIR with a new set of challenges. *The TNS must tap many sources to develop the most accurate, focused, and complete statement of requirements possible.*

Among the sources of potential operational requirements are:

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- ☞ Changes in environmental regulations,
- ☞ Changes in military specifications,
- ☞ Executive orders,
- ☞ Changes in workload (BRAC),
- ☞ Technical manuals and publications,
- ☞ NAVAIR environmental policy and guidance,
- ☞ Technology advances,
- ☞ P2 Plan and data analysis,
- ☞ Program Environmental Safety and Health Evaluations,
- ☞ DoD directives,
- ☞ Hazardous materials use data, and
- ☞ TRI and hazardous waste generation data.

### **The Technology Needs Survey (TNS)**

NAVAIR's Acquisition Support Team (AIR-8.4) within the Facilities and Environmental Programs Office tasked the Lead Maintenance Technology Center for the Environment (LMTCE) to implement the Technology Needs Survey (TNS). In FY98, the LMTCE used the TNS to assemble a list of technology needs from our customers through a well-recognized, structured methodology.

The intention of the Technology Needs Survey is to:

1. Ensure that user ESH requirements (needs) are collected and documented,
2. Help our customers communicate the relative importance of their needs, and
3. Merge the identified needs into the Acquisition Support Process as outlined in this plan.

Identifying, quantifying, and validating user needs is a critical step toward developing the NAVAIR ESH Strategic Plan that baselines all NAVAIR ESH technology developments.

ESH Technology Needs are defined as deficiencies relating to environmental, safety, and occupational health goals, regulations, or laws. Our customers may identify technology needs concerning the design, manufacture, operation, maintenance, and disposal of their systems. Examples include environmentally safe on-board fire suppressant systems for aircraft (i.e., Halon replacements), environmentally benign aircraft de-icing techniques, non-hazardous cleaning solvents for electronics and metals, and disposal of munitions.

The results of the FY98 survey have been evaluated by the AEPST to determine which needs can be satisfied by nonmaterial solutions, material solutions, off-the-shelf technologies or through on-going programs which require research, development and acquisition (RD&A).

The next step is for this information to be fed into the DOD Environmental Technology Requirements Strategy (DETRS). DETRS provides a comprehensive report that documents all of the ESH technology requirements across DoD. The goal of the DETRS is to provide an integrated list of DoD user needs and facilitate an analysis of the most pressing technology requirements. DETRS also leads to the development of an appropriate technology investment strategy. This provides a mechanism for NAVAIR's technology

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needs to gain higher visibility and leverage resources across the other services. The AEPST will develop solutions to NAVAIR's common ESH technology needs in partnership with the other services. This comprehensive approach will reduce costs and risks associated with NAVAIR's ESH RD&A programs.

For FY98, the TNS will promote a corporate environmental management plan that responds to our customers' needs for innovative technologies. The TNS will be the conduit through which we promote our customers' needs to the larger NAVAIR community. The TNS process benefits all of our customers by enhancing the visibility of their technology needs across the NAVAIR community so that the needs can be met. The TNS will also give our customers a voice in the RD&A requirements setting process.

### **Program Environmental Safety and Health Evaluations (PESHEs)**

Another source of potential weapon system priorities is the Program Environmental Safety and Health Evaluation (PESHE). Each program must complete a statement of the potential environmental impacts associated with program operations. The PESHE is another tool that NAVAIR uses to assemble and maintain a corporate requirements statement. *NAVAIR is targeting the development of effective PESHEs because we can reduce associated environmental risks by developing a better understanding of the role of a PESHE and the opportunities that exist under the W2210 Environmental R&D accounting line.*

A PESHE is the program's tool for evaluating the environmental, health and safety (ESH) impacts of the weapon system from a programmatic standpoint. ESH analyses are developed for each phase of the acquisition lifecycle and become the building blocks of a comprehensive PESHE. The PESHE is an ongoing process that is continually updated throughout the system acquisition life cycle. The PESHE then becomes the Program Manager's tool to modify the acquisition strategy as needed, based on risks associated with each phase.

As technology solutions are developed and/or transitioned to the fleet, the risk to a program can shift or be eliminated in certain phases of the acquisition lifecycle. Program managers must maintain an awareness of development of W2210-sponsored technologies and reflect this progress into their own PESHEs. These technological advancements can have significant impacts on the overall Acquisition Strategy.

As the Program Manager approaches each phase in acquisition, the ESH analyses should be reviewed, modified accordingly based on new information, and evaluated programmatically for risk. A PESHE has no required format and can be tailored to the needs of each program.

However, each PESHE must address the following five topics:

1. National Environmental Policy Act (NEPA) Compliance,
2. Environmental Compliance,
3. Hazardous Materials Management,
4. Pollution Prevention, and
5. System Safety and Health.

Above all, the PESHE needs to be practical, realistic, and useful, and therefore can and should be tailored to the specific needs of individual programs.

### **Range Environmental Impact Statements**

Another source of requirements are the Range Environmental Impact Statements (EISs). As a strategic business initiative, NAVAIR directed its Major Range Test Facility Bases (MRTFBs) to evaluate the

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environmental impacts associated with current and future range operations at each facility in accordance with the National Environmental Policy Act (NEPA).

An Executive Working Group was formed with personnel from AIR-8.4, NAWCWD 8.0, AIR-7.7, AIR-5.0C and CNO (N456) to help plan, guide, and execute a series of Environmental Impact Statements (EISs), and one Environmental Review with site managers. *The significance of these EISs are that program offices can now perform routine testing regardless of platform at these facilities without having to perform additional environmental impact analyses, unless the testing and/or operation is unique to the facility.* This simple fact identified early in a program's PESHE will greatly reduce cost and schedule impacts, and may streamline the program's acquisition strategy.<sup>7</sup>

### **Other Sources of Requirements**

NAVAIR's statement of the challenges facing the acquisition community will be augmented with a statement of need from the following sources:

- AEPST Action Officers,
- Hazardous Materials Management Plans,
- Facility and Program P2 Plans, and
- Other documents including special studies and analyses.

In addition, upcoming Congressional bills, proposed rulemakings, and effective dates for regulations will be analyzed for impacts to NAVAIR programs. Similarly, those areas that we master will be used to communicate our stories that demonstrate our commitment to the NAVAIR Environmental Acquisition Targets.

### **Implementation and Resources**

To guarantee the successful identification and quantification of operational requirements, AEPST action officers must collect needs and requirements from their individual competencies or program offices. As a group, the AEPST will use every means possible to consolidate requirements and conduct the necessary analyses. NAVAIR 8.4 will dedicate the necessary resources to assemble requirements, conduct the required analyses, and to develop priorities. The AEPST will rely on its action officers to maintain whatever mechanisms are deemed appropriate to obtain requirements from their respective customer bases.

### **Summary of Phase 1**

As a result of our work in Phase 1 of the Acquisition Support Process, we have developed NAVAIR's first-ever environmental acquisition targets. To guarantee the successful identification and quantification of operational requirements, AIR-8.4 has developed a data collection and analysis tool called the Pollution Prevention Data Analysis Tool (P2.DAT) that enables us to understand the impacts that our pollution prevention activities have on our hazardous waste generation, hazardous materials use. It also helps us to track our technology insertion and requirements definition processes. This database management tool contains information extracted from facility pollution prevention plans, TRI Form R submissions, and facility-sponsored data collection initiatives. Now that the Technology Needs Survey (TNS) for FY98 is complete, the P2.DAT database will be modified to accommodate information about operational requirements and proposed solutions (or projects).

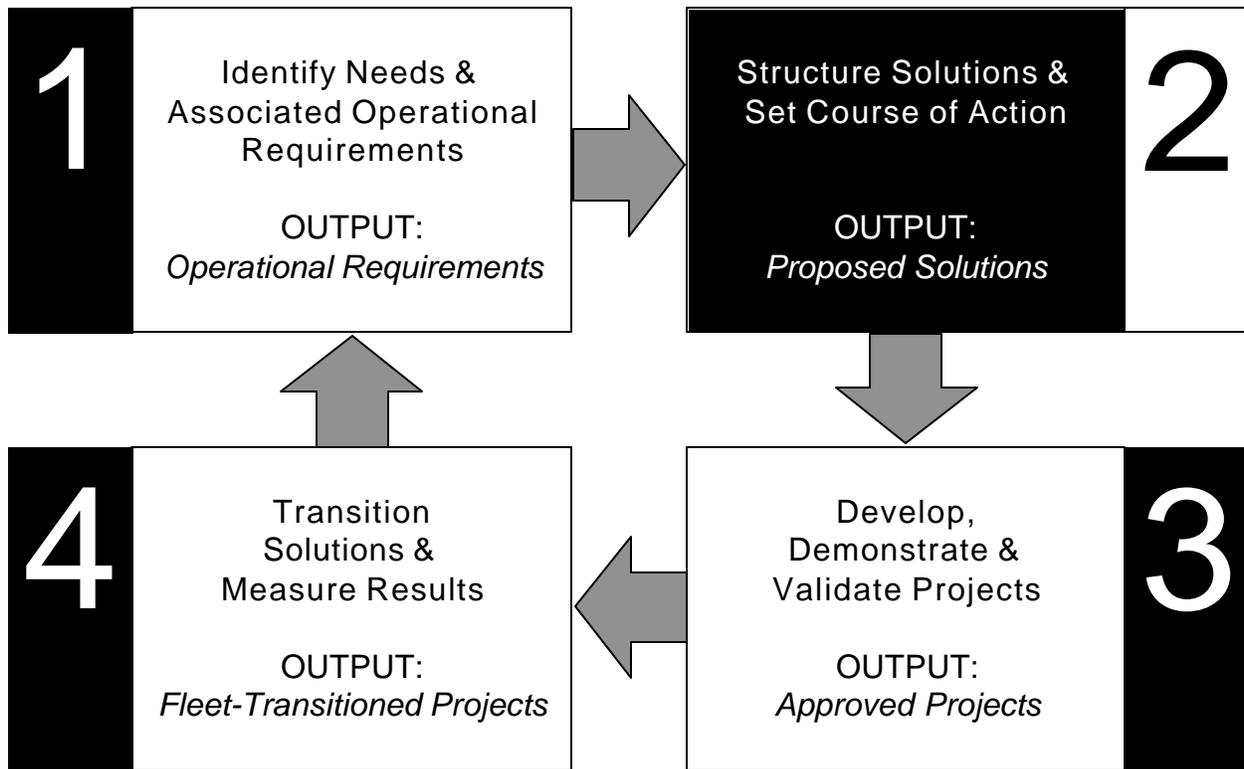
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<sup>7</sup> The Program Manager may select a Navy MRTFB site over another Service's site because it has documented its impact to the environment and offers less risk.

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Now that the AEPST has developed a comprehensive requirements statement that reflects the operational needs and priorities of their program and site managers, we are prepared to propose solutions for those needs in Phase 2 of the Acquisition Support Process.

## PHASE 2. ASSEMBLE SOLUTIONS & SET COURSE OF ACTION



GOAL: The AEPST will assemble a set of appropriate solutions to our corporate requirements.

During Phase 2, the AEPST will assemble the most feasible approach for addressing the operational needs identified in Phase 1. This will require AEPST action officers to solicit their competencies for proposed solutions to common operational requirements. The AEPST will then assemble the most feasible approaches into an execution plan that discusses the associated resources, policies, and priorities. The AEPST will also solicit needs from affected programs and installations that may impact multiple platforms or sites. AIR 8.3 and 8.4 shall be responsible for ensuring that resources are secured, programmed, or budgeted to support the development of solutions.

To propose an appropriate set of solutions, the AEPST will draw on a variety of information including:

1. Acquisition, maintenance, and support policies,
2. Best Management Practices (BMPs),
3. RDT&E initiatives, including:
  - RE* Re-design efforts,
  - RE* Industrial process modifications,
  - RE* Material substitutions, and

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- ~~3.3~~ Alternative technology considerations
- 4. Improved facility operations (including modernization and other investments in improving efficiency), and
- 5. Control equipment procurement.

The AEPST will pursue other organizations that it believes will offer potential solutions to NAVAIR's Environmental Acquisition Targets. Among those organizations that may help the AEPST develop solutions to meet the operational challenges of the aviation community are:

1. Assistant Secretary of the Navy for Research and Development and Acquisition (ASN(RD&A)),
2. Assistant Secretary of the Navy for Installation and Environment (ASN(I&E)),
3. National Defense Center of Excellence for the Environment (NDCEE),
4. Office of Naval Research (ONR),
5. The Lead Maintenance Technology Center for the Environment (LMTCE),
6. The Naval Facilities Engineering Service Center (NFESC),
7. The Chief of Naval Operations (CNO), and
8. Private sector contractors,
9. Educational and research institutions.

Each solution to NAVAIR's Environmental Acquisition Targets will be monitored, planned, and programmed as appropriate. Two programs, in particular, were identified as ones that NAVAIR should consider when proposing solutions to the requirements defined in Phase 1 - the Strategic Environmental Research and Development Program (SERDP) and the Small Business Innovative Research (SBIR) Program. These programs are described below.

**Strategic Environmental Research and Development Program**

The Strategic Environmental Research and Development Program (SERDP) was established in November 1990 to address environmental matters of concern to the Department of Defense (DoD) and the Department of Energy (DoE). SERDP is planned and executed in full partnership with the DoE and the Environmental Protection Agency (EPA). The central purpose of the program is to support basic and applied research and development of technologies that enhance the capability of DoD and DoE to meet their environmental obligations. Another purpose of the program is to share DoD and DoE research, technologies, and other information among governmental and private organizations to aid in environmental research and to bring applicable private sector technologies to bear on DoD problems<sup>8</sup>.

The AEPST will review SERDP-sponsored technologies on an annual basis to leverage appropriate projects as solutions to NAVAIR's own requirements. A listing of SERDP-sponsored technologies will be included in subsequent versions of the Strategic Investment Plan.

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<sup>8</sup> This overview was extracted from a SERDP profile contained at [www.acq.osd.mil](http://www.acq.osd.mil).

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### Small Business Innovative Research (SBIR) Program

Congress created the Small Business Innovative Research (SBIR) Program in 1982 to help small businesses more actively participate in federal research and development (R&D)<sup>9</sup>. Participating agencies are required to conduct an SBIR Program by reserving a percentage of their R&D budget to be awarded to small businesses through a three-phase process.

The three-phase process of the SBIR Program is as follows:

1. **Phase I - Feasibility Study.** A small business may submit a Phase I proposal in response to the topics published in an open DoD solicitation.
2. **Phase II - Development.** A Phase II proposal demonstrates a company's potential to render a product or process.
3. **Phase III - Commercialization.** Small firms may reach Phase III through private sector commercialization or by obtaining non-SBIR government follow-on contracts for additional technology development.

The AEPST will review SBIR-sponsored technologies on an annual basis to leverage appropriate projects as solutions to NAVAIR's own requirements. A listing of SBIR-sponsored technologies will be included in subsequent versions of the Strategic Investment Plan.

### Implementation and Resources

Once a list of solutions is developed, the AEPST will apply the DoD Measures of Merit and project scoring and ranking methodologies to develop a ranked list of projects that will best address the operational requirements of the aviation community. It is this list of recommended projects that will be sponsored by NAVAIR during Phase 3 of the Acquisition Support Process.

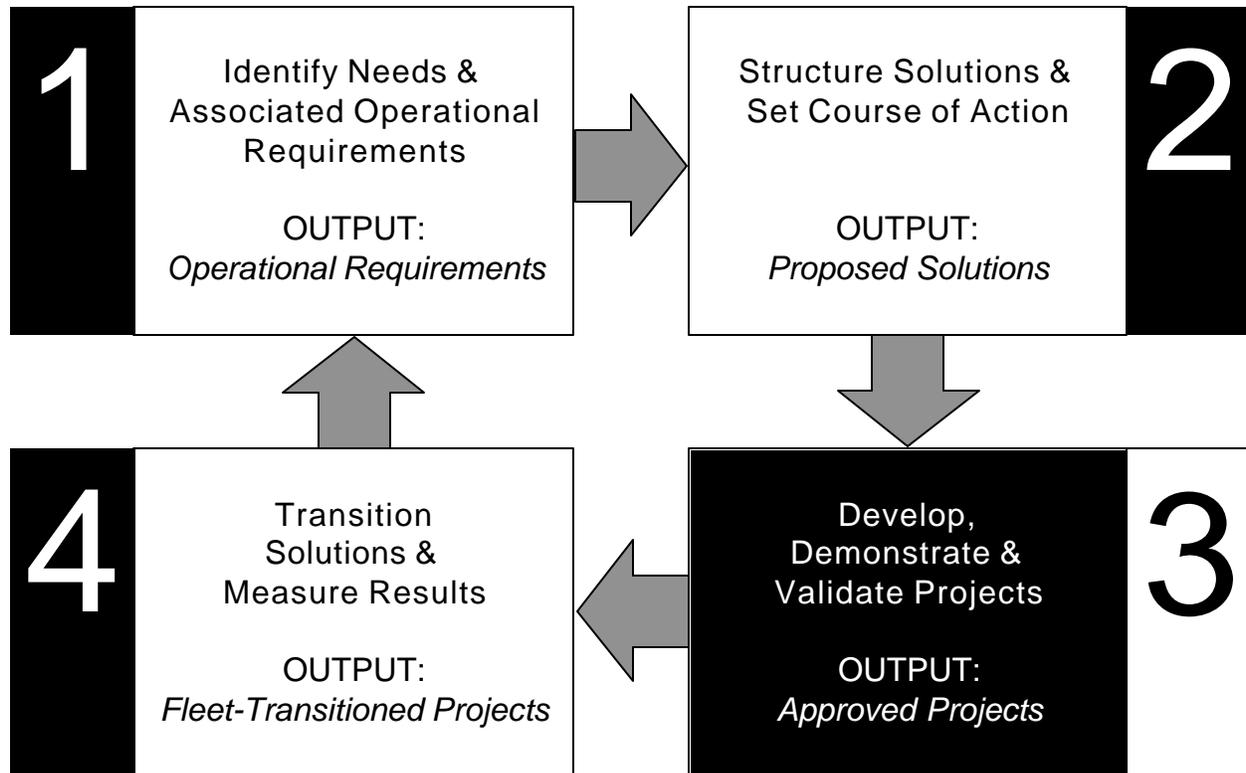
### Summary of Phase 2

This phase of the Acquisition Support Process provides multiple resources that meet NAVAIR's operational requirements. Many resources are external to NAVAIR and many are within NAVAIR's boundaries. Leveraging existing resources where possible and exploring new requirements will assist the AEPST in reducing the risks posed by the Targets identified in Phase 1.

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<sup>9</sup> This overview was extracted from SBIR's web site at [www.arpa.mil/sbir](http://www.arpa.mil/sbir).

## PHASE 3. DEVELOP, DEMONSTRATE AND VALIDATE PROJECTS



GOAL: The AEPST will sponsor those projects that optimize available resources and maximize the return to the aviation community.

These efforts will be executed through the use of currently programmed environmental resources, including the AIR-8.4 pollution prevention Operation and Maintenance - Navy (OM&N) line, the W2210 Research, Development, Test, and Evaluation (RDT&E) line, and the Navy Working Capital Fund (NWCF) environmental investments.

In particular, NAVAIR established the W2210 project line for addressing the pollution prevention needs of the aviation community. This project line is aimed at supporting the development, demonstration and evaluation of environmental technologies to address major command issues. *The W2210 project line establishes a vehicle by which NAVAIR can research specific technologies that meet the needs of program and site managers and the fleet.*

Although many of these solutions involve the development of new technologies, some answers to NAVAIR's problems may take the form of enhanced management practices, modified industrial processes, or the procurement of new equipment. If properly coordinated, these different types of solutions can address the collective need of the aviation community.

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In addition, other organizations have developed their own technology demonstration programs that the AEPST will leverage to meet the needs of the aviation community. *Although many of these solutions involve the development of new technologies, many answers to NAVAIR's questions may be in the form of enhanced management practices, modified industrial processes, or the procurement of new equipment.* Taken together, these different types of solutions can address the collective need for the aviation community.<sup>10</sup>

Once the appropriate information is collected, the AEPST will assemble the recommended approaches into an execution plan that includes the associated priorities, required resources, transition planning, programming, and budgeting.

Among the technology demonstration programs that may provide solutions to the TEAM's environmental operational challenges are:

1. NAVAIR's Environmental Technology Program (The W2210 Project Line)
2. The Environmental Security Technology Certification Program (ESTCP),
3. The Navy Environmental Leadership Program (NELP),
4. The Pollution Prevention Equipment Program (PPEP),
5. Environmental Equipment Evaluation Team for Aviation Support (EETAS),
6. The Joint Group on Acquisition Pollution Prevention (JG-APP), and
7. The Joint Depot Environmental Panel (JDEP).

Descriptions of these programs are provided with the intent of demonstrating the breadth of the research and development efforts that the AEPST must attempt to leverage. The AEPST intends to coordinate its own technology development with these other programs to reduce redundancy and maximize the coverage of limited research and development resources. Subsequent versions of the Corporate Environmental Management Plan will tie technology projects to the specific operational requirements identified in Phase 1 of the Acquisition Support Process. The intent is to concentrate on those technologies that meet a stated requirement of the aviation community.

**NAVAIR's Environmental Technology Program (W2210 R&D Line)**

NAVAIR currently receives funding for the development, demonstration, and certification of environmental protection technologies as part of the Navy Environmental Protection Program Element (PEO603721N). This support, that was provided initially to address the acute regulatory impact encountered by naval aviation maintenance activities, currently emphasizes shore side aircraft maintenance technologies due to funding constraints and the program origin as part of the NAVFAC Pollution Abatement Ashore project (Y0817). To provide the needed technologies that address the entire scope of naval aviation environmental protection, NAVAIR needed and received an independent RDT&E project number (the W2210 project line)<sup>11</sup>. (Appendix C contains a listing of the technologies currently under development by the Naval Air Systems Team under that project line.) *NAVAIR's RDT&E program for naval aviation environmental protection is organized into nine separate issue areas (five of which received funding in FY96 and FY97).*

The W2210 project line areas are:

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<sup>10</sup> Of particular concern to Program Managers is the lead-time provided to successfully incorporate new technologies into the design and/or modification of the aircraft as well as the preparation of facility infrastructures to accept a new technology.

<sup>11</sup> Big Issues Addressed By NAVAIR Technology Insertion, *Xchange Magazine* (Spring 1997), pages 9-10.

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- Issue 1. Chromium Replacement
- Issue 2. Organic Protective Coatings
- Issue 3. Depainting Technology
- Issue 4. Solvent Substitution
- Issue 5. Non-Hazardous Plating
- Issue 6. Aircraft Composite Material Technologies
- Issue 7. Ordnance Materials Technology
- Issue 8. Alternative Aircraft Systems
- Issue 9. Miscellaneous Environmental Technologies<sup>12</sup>

**Other Technology Development Programs**

In addition to the environmental program sponsored by NAVAIR, there are other programs that develop complementary technologies. NAVAIR will work to minimize redundancy with these other programs and maximize the use of limited research and development resources. Representatives from these other programs will be invited to AEPST meetings to keep the membership abreast of related technology developments. NAVAIR also will begin to track the development of individual technologies to ensure maximum coordination and leverage.

***Environmental Security and Technology Certification Program (ESTCP)***

The Environmental Security and Technology Certification Program (ESTCP) will be profiled in subsequent versions of the Corporate Environmental Management Plan. A list of technologies sponsored by the ESTCP program also will be provided.

***Navy Environmental Leadership Program (NELP)***

The Chief of Naval Operations Environmental Quality Management Board established the Navy Environmental Leadership Program (NELP) to find new and innovative ways to manage Navy environmental programs. In October 1993, the Secretary of the Navy approved the NELP Charter and Mission Statement:

*NELP activities will serve as test beds for new and innovative technologies and focused management to address the full spectrum of environmental issues, and will export their successes throughout the Navy. Other primary program goals include reducing cost and accelerating Installation Restoration (IR) Program cleanups.*

NELP Team members are pursuing a variety of initiatives to demonstrate innovative treatment technologies and management procedures that address environmental challenges facing the Navy.<sup>13</sup>

The Naval Facilities Engineering Service Center (NFESC) has issued a Broad Agency Announcement (BAA) through the Commerce Business Daily for environmental innovative technologies. Through the BAA, developers can submit abstracts of their technologies to the Navy. These technologies can potentially be selected for demonstration through the NELP. As such, the AEPST will conduct an annual review of NELP-sponsored technologies to assess relevance to the NAVAIR Environmental Acquisition Targets.

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<sup>12</sup> These descriptions and summaries were extracted in the POM 1998 Baseline Assessment Memorandum for Aviation Pollution Prevention (PEO603721N/ W2210).

<sup>13</sup> For example, one goal of the NAS North Island NELP is to have several ongoing projects that demonstrate innovation in environmental "C3P2" - Cleanup, Compliance, Conservation, and Pollution Prevention.

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***The Pollution Prevention Equipment Program (PPEP)***

The Pollution Prevention Equipment Program (PPEP) provides the aviation community with another set of equipment technologies that may address the operational requirements developed in Phase 1 and the solutions proposed in Phase 2. NAVAIR, PMA-260, is designated as the PPEP executive agent under sponsorship from the OPNAV, N451, Environmental Protection, Safety and Occupational Health Division. The PPEP acquires P2 equipment for Naval facilities and joint users primarily through the acquisition of commercial off-the-shelf software. The PPEP acquisition process is similar to the AEPST Acquisition Support Process roadmap. Major claimants submit their P2 requirements in accordance with the published PPEP Standard Operating Procedures (SOP). PPEP is OPN funded, and therefore, the program supports non-DBOF activities. DBOF activities participate in the program, but provide their own funding sources to do so.

As an executive agent, PMA-260 has tasked NAWCAD, Lakehurst, to conduct the following services for the PPEP<sup>14</sup>:

1. System engineering,
2. Acquisition management,
3. Logistics,
4. Test and evaluation,
5. Affordable readiness issues, and
6. Commodity management.

PPEP acquisition categories are identified as non-competitive or competitive. Non-competitive acquisitions are those that require demonstration and validation, most often at the NELP sites. The PPEP demonstration validations ensure P2 system suitability and effectiveness prior to fleet introduction. Competitive acquisitions are for off-the-shelf items deemed suitable for immediate fleet introduction. Volume II of the NEAT Guide contains a representative listing of the types of equipment procured by facilities through the pollution prevention equipment program.

***Environmental Equipment Evaluation Team for Aviation Support (EETAS)***

The Environmental Equipment Evaluation Team for Aviation Support (EETAS) Program was established to evaluate the feasibility of incorporating equipment into the operation of aviation field activities. In particular, the AEPST, through the LMTCE, will evaluate engine washing procedures to determine which pollutants (if any) are generated.

***The Joint Group on Acquisition Pollution Prevention (JG-APP)***

The Joint Group on Acquisition Pollution Prevention (JG-APP) is another potential source of technological solutions that address the NAVAIR Environmental Acquisition Targets. JG-APP was established by the Joint Logistics Commanders (JLC) to address pollution prevention matters within the services acquisition communities. The JG-APP supports reducing and/or eliminating hazardous material by fostering joint service cooperation at contractor design, manufacturing, and re-manufacturing process locations. The operating agent for the JG-APP is the Joint Pollution Prevention Advisory Board (JPPAB), with members from each DOD agency/service's acquisition community. JG-APP is working to establish a process by which original equipment manufacturers (OEMs) can consolidate manufacturing processes that utilize hazardous materials to the single most efficient process (Single Process Initiative Concept). This situation necessitated the development of standard procedures to address present and future, increasingly large, JG-APP initiatives.

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<sup>14</sup> NAWCAD Lakehurst P2 acquisitions primarily serve the aviation support equipment community.

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The objective of the JG-APP is to establish a baseline procedure to allow cooperative TEAM responses to diverse, highly specialized questions that would otherwise be asked repetitively of each program office. A TEAM response is required to ensure strategic selection of technology development initiatives, such as JG-APP. However, the TEAM response must incorporate concerns for all affected programs.

The JG-APP seeks to reduce hazardous material requirements and increase manufacturer efficiency by reducing the number of processes requiring hazardous material, at a particular site. Volume II of the NEAT Guide contains examples of the technologies sponsored by the JG-APP<sup>15</sup>.

***The Joint Depot Environmental Panel (JDEP)***

The Joint Depot Maintenance (JDM) Program addresses the full range of support elements, including hardware, software and facilities, that may be applied in providing depot maintenance support for weapons systems, end items, and their components. The JDM Program goal is that depot maintenance interservice support shall be utilized and provided to the maximum extent possible commensurate with effective support to operational forces and efficient utilization of the Services maintenance resources.

The Joint Depot Environmental Panel (JDEP) was established in 1988 to foster coordination among the Services in the application of environmental programs, including hazardous waste reduction at depot maintenance activities, and to facilitate exchange of information on environmental issues within the depot maintenance community. The JDEP also works to identify and advocate new and emerging environmental technologies, applicable to depot maintenance activities. As such, the AEPST will tap JDEP-sponsored technologies where appropriate.

**Implementation and Resources**

To guarantee the successful demonstration and validation of technology and other related projects, the AEPST will rely on the coordination of its own W2210 project line with other relevant programs. This will require increased tracking of project implementation to ensure accountability.

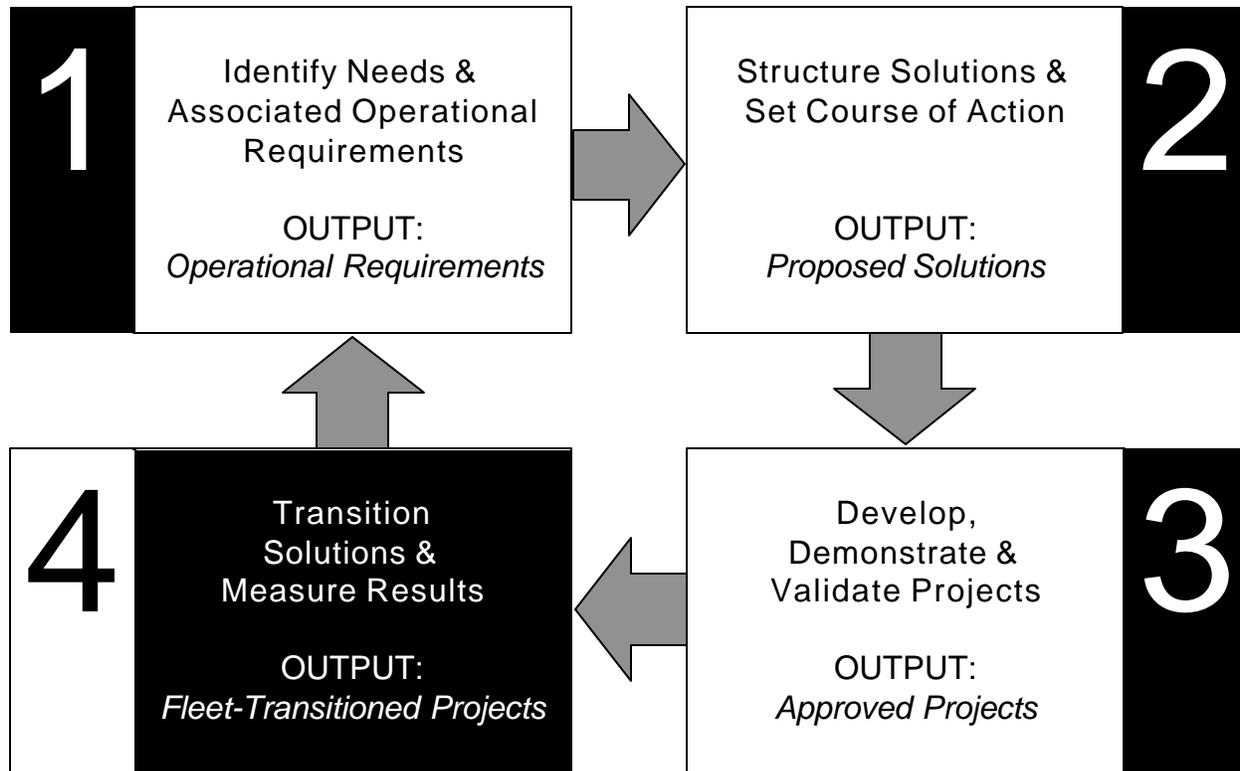
**Summary of Phase 3**

This phase of the Acquisition Support Process will employ multiple avenues for demonstrating the applicability of technologies, practices, and processes to reduce the environmental risks to acquisition programs. The AEPST will continue to track the projects it sponsors as well as those projects sponsored by other technology development programs for use when addressing the NAVAIR Environmental Acquisition Targets (NEAT). Annual reviews of all technology programs will ensure that the AEPST is leveraging other resources where appropriate and reducing redundancy whenever possible. Program and site managers play a key role in planning for the successful transition of the selected technologies into base operations. Based on existing technology descriptions, the AEPST has developed a standard technology profile and is in the process of incorporating it into its tracking procedures.

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<sup>15</sup> For FY1998, ten new JG-APP initiatives are scheduled. At the time of this printing, no specific information about these initiatives was available.

## PHASE 4. TRANSITION SOLUTIONS & MEASURE RESULTS



GOAL: The AEPST will work to ensure the efficient transfer of technical solutions to user-identified needs to the Fleet. The AEPST will also measure the impact of those solutions on Fleet operations.

This transition will rely on the ongoing communication with and commitment from program managers to ensure that newly-developed solutions are programmed for implementation into new system designs and fielded platforms. This also will involve coordination with site managers to prepare for the uniform incorporation of solutions into the operation of NAVAIR installations. Program and installations should utilize existing processes as a source to transition Phase 3 projects to the Fleet.<sup>16</sup> Since lead time is a critical concern, documents such as the PESHE, facility P2 Plans, and the NEAT should be utilized to identify necessary programming and budgeting requirements.

To ensure the success of the Acquisition Support Process, program and installation managers should continuously feed the AEPST with their individual requirements (Phase 1) and then budget in the out-years to guarantee the successful transition of appropriate solutions to the Fleet (Phase 4).

<sup>16</sup> These processes include Engineering Change Proposals (ECPs), CAPCOM and the Navy Working Capital Fund (NWCF).

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During the fourth phase of the Acquisition Support Process, the AEPST also will assess the environmental impacts of the actions taken to address operational requirements in Phase 1. *As part of this evaluation, the AEPST will set performance standards that will be used to assess progress across the TEAM.*<sup>17</sup> The AEPST also will assess the impacts that the application of technologies and modification of industrial processes have on site operations and program management. We must also review the appropriate Authorized Use Lists (AULs), hazardous materials inventory and usage data as well as information on the cost:benefit of a particular project.

AEPST action officers also will identify and execute other actions necessary to complement the technology and other related projects referenced above.

This may include the following types of actions:

1. Updating technical manuals,
2. Disseminating results of research projects,
3. Ensuring the successful transition of demonstrated technologies to the Fleet,
4. Developing public relations plans through Public Affairs Offices,
5. Assembling program office teams to affect the design, maintenance, operation, and installation of new technologies or practices,
6. Planning, programming, and budgeting for the insertion of new technologies,
7. Assessing, planning, and submitting appropriate military construction projects,
8. Identifying and obtaining NEPA analysis (if required),
9. Identifying and obtaining permits or changes to existing permits (if necessary), and
10. Updating PESHEs (when appropriate).

### **Implementation and Resources**

The AEPST must rely on program and site managers to identify those obstacles to the successful transition of technologies and other improvements to the Fleet. The AEPST will work closely with the Program Managers at the beginning of the Acquisition Support Process to ensure that valuable requirements are identified and appropriate technologies are considered. Open discussion of the challenges to technology transition at the AEPST meetings should help to pave the way.<sup>18</sup>

### **Summary of Phase 4**

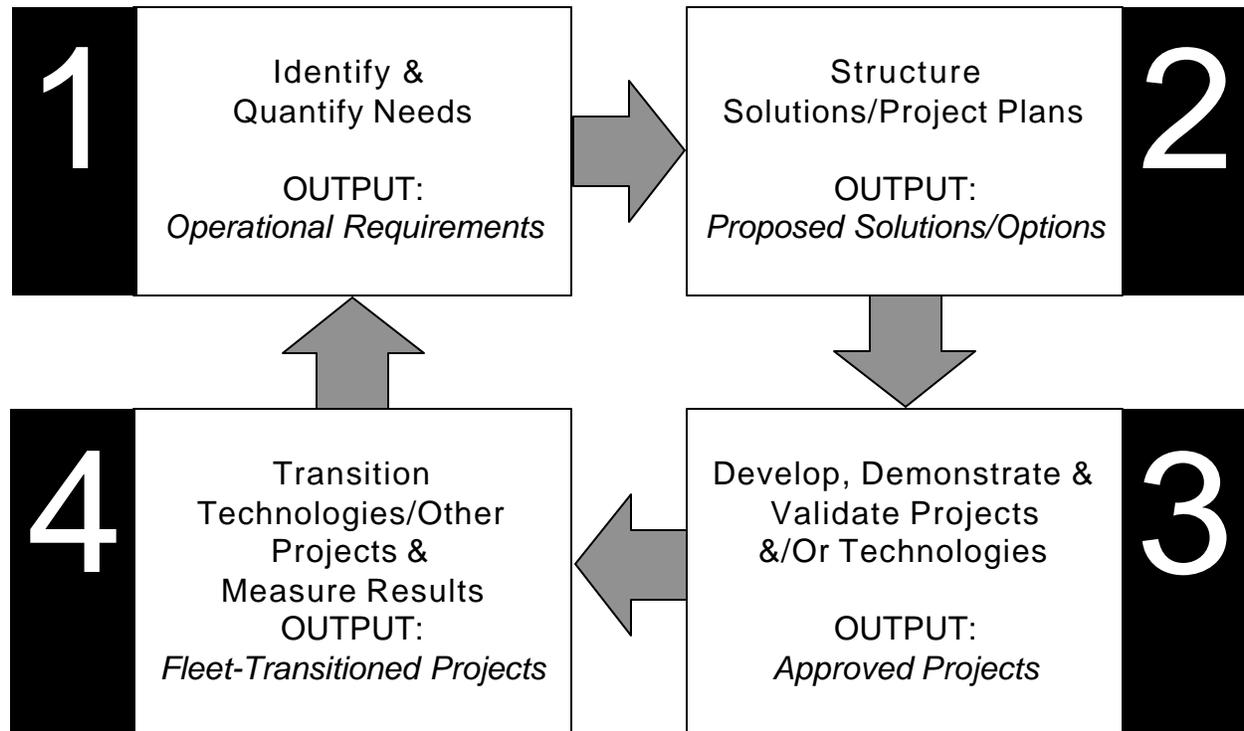
The last phase of the Acquisition Support Process is probably the most important and possibly the most neglected. Phase 4 sets forth the need for good planning early in the development of requirements and helps to shape the events across the entire Acquisition Support Process.

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<sup>17</sup> Reasonable approaches for evaluating the impact of a project on the acquisition community will include measuring toxic chemicals released and hazardous waste generated by various platforms.

<sup>18</sup> For example, the AEPST must give Program Managers sufficient lead time (as much as 2-3 years) if a technology innovation may involve changes in the design of a platform.

## SUMMARY



This will take a TEAM effort.

The AEPST's success and the usefulness of this Plan and its associated targets are largely dependent on the continued participation of PEO/PMA representatives and all NAVAIR competencies. The AEPST relies on every member of the TEAM to:

1. Identify emerging environmental requirements,
2. Structure the development of new technologies or alternative solutions,
3. Pass relevant issues along to their respective AEPST action officer, and
4. Help to transition the right technologies to the Fleet.

Since the NAVAIR Environmental Acquisition Targets intend to reflect the most current NAVAIR priorities, updates to those targets will be included in our Strategic Investment Plan. Hardcopies of this Plan can be obtained from the following individuals:

Herman Varmall at 301-757-2137	(varmallha@navair.navy.mil)
Doug Trollinger at 301-757-2135	(trollingerjd@navair.navy.mil)

The Plan is also available via the NAVAIR Environmental Web Site at the following address:

**<http://navair.alc.daps.mil/resources/acquisition/neat.html>**

**NAVAIR ENVIRONMENTAL ACQUISITION TARGETS (NEAT):  
A CORPORATE ENVIRONMENTAL MANAGEMENT PLAN**

Contractor support services were provided by Bruce McCaffrey Consulting, Inc. Questions can be directed to Bruce McCaffrey at 202-544-9796 or [bmccaffrey@erols.com](mailto:bmccaffrey@erols.com).