



# Department of Defense Legacy Resource Management Program

PROJECT NUMBER 05-284

## **Integrating the National Environmental Policy Act with Environmental Management System through Geographic Information System**

Bill Van Hoesen / Fort Lewis, Washington

August 2006

Prepared for:

## **U.S. Army Directorate of Public Works Fort Lewis, Washington**



# Fort Lewis Legacy Project: Integrating the National Environmental Policy Act with Environmental Management System through Geographic Information System Final

ENSR Corporation  
August 2006  
Document No. 09000-389-110  
Army Document No. W912DW-05-D-1009 Delivery Order 0005



Prepared for:  
**U.S. Army Directorate of Public Works**  
**Fort Lewis, Washington**

# Fort Lewis Legacy Project: Integrating the National Environmental Policy Act with Environmental Management System through Geographic Information System Final

Prepared by:

Mick Bilney, MBA  
Frontier Environmental Systems, Inc.  
Wheat Ridge, CO

ENSR Corporation  
August 2006  
Document No. 09000-394-200  
Army Document No. W912DW-05-D-1009 Delivery Order 0008



# TABLE OF CONTENTS

Introduction ..... 1

Legacy Project SOW Task 1, 2 and 3 Deliverables ..... 3

Strategic Plan and Guide ..... 15

## Attachments

**Attachment A:** NEPA Environmental Assessment Baseline Process Diagram

**Attachment B:** Fort Lewis Model High-Level Integrated Sustainability, EMS and NEPA Environmental Assessment Process Diagram

**Attachment C:** Fort Lewis Deconfliction Charrette Process Diagram

**Attachment D:** Fort Lewis Model Process for Producing Environmental Management Plans in EMS Format Diagram

**Attachment E:** Table Demonstrating How Geo-Spatial Tools Could Facilitate Alignment

**Attachment F:** Presentation Example Communicating How Geo Spatial Tools can Help Achieve Environmental Objectives and Improve Environmental Performance

**Attachment G:** Effective Risk Assessment Method

**Attachment H:** Lead and Lag Performance Measures for Sustainability Goals

**Attachment I:** Training Presentation on BSC Essentials and the Legacy Project



## Introduction

The Fort Lewis NEPA Legacy Project was designed and executed to define the existing current-state NEPA process and to design a new process integrating NEPA, EMS, Geo-Spatial Tools and Sustainability Goals.

Certain conditions drive the adoption of such an integrated process to improve the efficiency and effectiveness of environmental management at a military installation. These conditions include when:

- Cost efficiencies are needed due to funding shortfalls
- Stationing actions occur
- New or renewal of real estate transactions
- Major or minor construction is planned (1391 or 4283)

Implementing a process that integrates NEPA, EMS, Sustainability Goals and Geo Spatial Tools will be helpful to guide, demonstrate and manage:

- Environmental Impact Analysis within NEPA
- EMS Aspects and Impacts
- GIS Analysis, Data Management and Use

An integrated process as described here can be effective at any military installation that undergoes frequent changes or wants to adapt more effectively and efficiently to the DOD's transformation process.

To design and implement an integrated process, numerous stakeholders should be involved including:

- Facility Commander
- Proponents
- Top Environmental Directors, Managers and Professionals
- NEPA Practitioner (s)
- Sustainability Teams
- EMS Environmental Management Representative (s)
- Environmental Program Managers
- Others with environmental related responsibilities who need to be aware of proposed or actual actions and changes affecting the installation's mission

The process diagrams incorporated in this document are designed to communicate in graphical form how existing and proposed high-level processes work. The tables provide additional clarity of how alignment of goals, objectives and measures can be achieved. The text provides descriptions of the items called out in the Legacy Scope of Work. These components are linked by text describing the sequence of steps necessary to implement the integrated process approach. Together these items and text provide a Strategic Plan and Guide for those installations considering implementing a process that integrates NEPA, EMS, Geo-Spatial Tools, and Sustainability Goals.

**Fort Lewis first developed a description of the installation baseline NEPA Process. This provides a view of the process as it exists and helps establish who needs to be added and what needs to be done to develop an integrated process. The NEPA Environmental Assessment Baseline Process Diagram is in Attachment A.**

**After the baseline description, Fort Lewis developed a desired "future state" process diagram to describe how the NEPA, EMS, and Sustainability Goals would fit together and interact at the installation in an integrated process. As can be seen in the diagram, within the integrated process the**



installation's NEPA program becomes a provider of inputs of intermittent data on changes occurring on the installation into the EMS Planning and Management of Change process. These inputs should be evaluated by Environmental Management Representatives through the EMS planning process for significant impacts and linkages to other EMS elements such as Objectives and Targets, Preventive and Corrective Actions, etc.

The "future state" diagram also describes where installation management believes there may be opportunities to increase the use of Geo-Spatial tools. These places in the process are identified by the flags in the Fort Lewis Model Process Diagram.

The Fort Lewis Model High-Level Integrated Sustainability, EMS and NEPA Environmental Assessment Process Diagram is in Attachment B.

## Legacy Project Statement of Work Tasks 1, 2, and 3 Deliverables

### Item 1.a.: Process points, interactions and activities critical to effective Management of Change for operational and organizational elements.

Within the Management of Change process there are key points where transactions and interactions take place that are critical for the installation to manage in order that environmental requirements and impacts do not negatively affect the mission.

After the proposed or “future state” diagram is developed the organization should identify the key points in the process that are critical to effective Planning and Management of Change.

- Transaction between proponent and NEPA Practitioner regarding Proposed NEPA Action
- Organization, conduct and follow-up of Deconfliction Charrette meeting
- Deconfliction Charrette process activities and points of interaction between Deconfliction Charrette and EMS Planning
- Interaction between NEPA Program Manager and those involved in EMS Planning activities
- Interaction between NEPA Program Manager and EMS Environmental Management Representatives
- Integration of NEPA Proposed Actions into the EMS Planning Process
- Integration of NEPA Proposed and Approved Actions into EMS Operation and Implementation element
- Integration of NEPA Approved Actions into EMS Checking element
- Integration of NEPA Approved Actions into EMS Monitoring, Measurement and Management Review process
- Assessment of alignment of NEPA Proposed Actions with Sustainability Goals and EMS objectives
- Alignment of NEPA Approved Actions with Sustainability Team activities and Sustainability goals

As described above the NEPA process at Fort Lewis includes a valuable component called “Deconfliction Charrette”. The Deconfliction Charrette process is a vehicle for engaging the necessary participants in the NEPA process. In the “Future State” integrated process, Deconfliction Charrette plays a significant roll in developing broad-based awareness and understanding of the actual and potential impacts of actions proposed by proponents.

Charrettes are a process where all stakeholders collaborate in a “short, intensive, teamwork-oriented, multidisciplinary roundtable – to ensure that key synergies between design elements are captured and that those elements work together to yield big energy and resource savings at the lowest possible cost.” (*Natural Capitalism*; Hawken, Lovins and Lovins, p. 90-91, 1999)

The diagram in Attachment C demonstrates how this process works.

## Item 1.b. EMS Format-Template for NEPA and other Environmental Plans

The following is a standard format template for Environmental Management Plans based on the ISO 14001:2004 EMS element structure. It demonstrates how Plans could conform to EMS elements; describes how the Plan is developed, modified, implemented and maintained; and references related documents, records, lists, etc. This template is supported by the Production of Management Plans in EMS Format Process Diagram in Attachment D.

### Management Plan Title Page

#### Table of Contents

#### List of Appendices

Catalogue of lists, documents, directives, records, etc. referenced in the Plan

### Chapter 1 – Introduction

- Summary of Plan Purpose, Goals, Objectives, Activities, Alignment/Linkages to Fort Lewis EMS and Business Objectives and Sustainability Goals

### Section I – Purpose

- Detail of the purpose of the Plan, its main activities and major tasks
- Describe a schedule of Plan activities
- Explanation of Terms, Abbreviations and Acronyms

### Section II - Responsible Parties

- List the teams or groups involved in Plan activities
- List the titles of positions of those assigned to perform activities of the Plan
- Describe the activities of the Plan performed by the responsible parties (Reference job descriptions and organization charts and their locations)

### Section III - Program Management Tools, e.g. Air Program Management Tools

- Indicate where and how Geo-Spatial and other Plan-specific tools are used to meet Plan requirements and achieve Plan objectives

### Chapter 2 - Environmental Policy

- Describe how one or more policy commitments are met by the Plan
  - Compliance with Legal and Other Requirements
  - Prevention of Pollution
  - Continual Improvement

### **Chapter 3 - Planning**

- Identify specific Legal and Other Requirements the Plan is designed to help facilities meet including any regulatory or otherwise required permits
- List Significant Aspects and Impacts that relate to the Plan
- Describe the Plan's objectives and targets and their linkages to EMS objectives and Sustainability goals, and the facilities business objectives
- Identify EMS Programs (EMP's) implemented to achieve Plan objectives

### **Chapter 4 - Implementation and Operation**

- Describe how the Plan is developed, implemented and maintained and which positions, groups and/or teams participate in each stage
- Identify the operating areas, activities and equipment covered by the Plan
- Summarize maintenance plans and schedules pertinent to Plan equipment

#### **Section I - Resources, Roles, Responsibility and Authority**

- Describe resources, roles, responsibilities and authorities that apply to the Plan
- List the positions having responsibilities under the Plan and provide direction to relevant job descriptions and organizational charts
- Describe the process and who is responsible for keeping the Plan up-to-date, implemented and maintained
- Identify the EMS Management Representative assigned to monitor the Plan

#### **Section II - Competency, Awareness and Training**

- Describe how the competence of responsible persons covered by the Plan is determined
- Describe the awareness and job-specific training requirements of the Plan and the schedule for providing training
- Reference the applicable training database

#### **Section III - Communication**

- Describe the key internal and external communication-flows of the Plan proponent and their participants
- Describe the nature and outcome of any contacts from internal and external interested parties
- Reference the records of the contacts

#### **Section IV - Documentation**

- List the key documents and records related to the Plan
- Identify where the documents and records are located
- Describe the review schedules for documents pertinent to the Plan

#### **Section V - Control of Documents**

- Describe which Plan documents and records are within the scope of the EMS and are thus controlled by the EMS Document and Record control procedure

#### **Section VI - Operational Controls**

- List the control procedures and other controls applicable to the Plan
- List the positions requiring and responsible for the controls
- Describe how Plan operational controls are covered in training

#### **Section VII - Emergency Preparedness and Response**

- List the emergency procedures and Plans that relate to the management Plan
- Describe how emergency response measures related to the Plan are tested

**Chapter 5 - Checking**

**Section I – Monitoring and Measurement**

- List the Key Characteristics that apply to the Plan
- List the measures or metrics facilities use to monitor and improve its environmental performance that apply to the Plan
- Describe the frequency of monitoring of the Plan’s operational controls
- List all monitoring and measurement equipment used to monitor Plan required or related equipment and activities
- Identify the location of Plan related records of monitoring and measurement

**Section II – Evaluation of Compliance**

- Describe how compliance with legal and other requirements of the Plan is evaluated
- List the locations of records of compliance evaluations of the Plan

**Section III – Nonconformity, Corrective Action and Preventive Action**

- Describe how nonconformance with Plan requirements is determined, evaluated for root causes and reviewed
- Describe how corrective and preventive actions of nonconformity are conducted and how changes in the Plan or the EMS are made
- Describe the location of related records of non-conformances and corrective and preventive actions

**Section IV – Control of Records**

- Describe how and where records of the Plan activities are stored, protected, retrieved, retained and disposed

**Section V – Internal Audit**

- Describe the process and positions responsible for planning, conducting and participating in internal audits
- Describe the schedule of internal audits of the Plan’s activities and related documents and records

**Chapter 6 – Management Review**

- Identify which initial Management Review group has responsibility for reviewing the performance, activities and other elements of the Plan
- Describe how the results of the initial Management Review progresses up to the Base-wide level Management Review
- List and identify the location of Plan-related documents, data, measures, metrics and records reviewed during Management Review
- Identify the position responsible for presenting plan performance and metrics to both the initial and Base-wide level Management Review groups
- Describe the process of Management Review decision-making for the Plan

**Appendices of Plan referenced Lists, Directives, Documents, Records, and etc.**

**Items 1.a.b.and c.: Identify additional means for Geo-Spatial Tools to help improve environmental performance.**

**Descriptions of additional means and methods for how Geo-Spatial Tools could be used to improve environmental performance may be helpful, such as the following:**

## Initiation Phase

- Helping EMS Management Representatives, Subject Matter Experts and Sustainability Teams develop sustainability goals.
  - Using GIS tools: charts, diagrams, maps to present data
  - Defining the data collection process
  - Specifying ownership of data and information and roles of owners
  - Using data already captured in programs as inputs for GIS
  - Mapping and modeling encroachment issues
  - Identifying species and habitat boundaries and potential impingement points
  - Organizing and presenting data on encroachment, species, emissions, media and other environmental related interactions and interfaces

## Planning Phase

- Conduct of Integrated Deconfliction Charrette Process encompassing NEPA, EMS and Sustainability
  - **Training and communication tools for increasing awareness of Sustainability goals and issues resulting from Sustainability Action Plans**
  - **Identifying interaction and interface points between Sustainability and EMS activities and Mission and Operations activities**
  - Identifying additional data needed to establish sound communication and fact-based decisions
  - **Using charts, diagrams and maps to organize and present summary and detailed data understandable to the audiences involved**
- Organizing Interdisciplinary Teams
  - Organizing and categorizing data useful to different teams
  - Promoting cross-team comparison of data and geographical issues
  - Tools for Team members to use to communicate technical environmental and sustainability issues to their managers or others
- Identifying Potentially Impacted Resources and Determining Actual Impacts of Proposed NEPA Actions
  - **Organizing emissions data to identify the magnitude of impacts**
  - **Visual tools, i.e. process diagrams, for the NEPA practitioner to provide early warning for proponents of potential severity of proposed actions**
  - **Modeling NEPA Actions to help define specific boundaries of impacts**
  - **Providing standardized tools to communicate data in a manner acceptable to proponents**
  - **Communicating to proponents the downstream effects over-time of their upstream decisions**
- Integrate NEPA Proposed Actions and Alternatives and Environmental Management Plans into EMS Planning and Management of Change Process; Evaluate Actual and Potential Impacts; Integrate EMS Objectives into Sustainability Goals
  - **Graphically identify and represent impacts resulting from activities**
  - Means to graphically identify and evaluate actual and potential environmental, safety and security risks and needed controls
  - **Graphically demonstrate how changes in activities and processes may cause impacts elsewhere inside and outside the Fort Lewis boundaries**
  - Promote development of a database with graphical outputs demonstrating relationships between Sustainability Goals, EMS Objectives, and NEPA Approved Actions
  - Graphical representation of linkages between NEPA and EMS objectives and monitoring and measurement and data collection activities

- Graphical representation of EMS Significant Aspects and Impacts and Operational Controls

### Evaluation and Operation Phase

- Evaluate NEPA Alternatives against Screening Criteria
  - Tools for the NEPA Practitioner to use to graphically communicate with proponents of actual and potential impacts of proposed actions
  - Graphically represent screening criteria and the rationale for recommendations
  - Tools for proponents to use to make their own comparisons to identify potentially effective alternatives
- Ranking Alternatives and Identifying Preferred Alternatives
  - Visually represent alternatives with graphical comparisons of choices
  - Visually demonstrate rationale for recommendations and effects of decisions
  - Communication of alternatives and preferences in consistent manner to variable audiences to reduce confusion, misrepresentation, misunderstanding and negative responses
- Conduct of External Review (Military Department)
  - Visual representation of alternatives with graphical comparisons of choices
  - Visually demonstrate rationale for recommendations and effects of decisions
  - Communication of alternatives and preferences in consistent manner to variable audiences to reduce confusion, misrepresentation, misunderstanding and negative responses
- Conduct of Public Review
  - Visually represent alternatives with graphical comparisons of choices
  - Visually demonstrate rationale for recommendations and effects of decisions
  - Communication of alternatives and preferences in consistent manner to variable audiences to reduce confusion, misrepresentation, misunderstanding and negative responses
- Integration of NEPA Actions, Environmental Management Plans and Sustainability Goals into the EMS Operation and Implementation element and with Environmental Operating Permits
  - **Means to better describe need for resources**
  - **Means to better describe related roles and responsibilities of personnel**
  - **Training tools to effectively increase awareness and build competency in personnel**
  - **Means to enhance communication with internal and external interested parties and stakeholders**
  - **Means to better identify affiliated documents and records**
  - **Means to graphically describe location and necessity for operational controls and universe of responsible and affected personnel**
  - **Means to graphically describe relationship with and need for emergency preparedness and response procedures and measures**
  - **Means to graphically identify and evaluate actual and potential risks and needed controls**

### Action and Review Phase

- Integration of NEPA Actions, Environmental Management Plans and Sustainability Goals into EMS Checking and Management Review elements
  - **Opportunity to identify and communicate critical monitoring data with graphical tools for greater understanding by interested parties and stakeholders**
  - **Means to graphically organize, summarize and/or communicate NEPA, EMS and Sustainability performance data in a manner understandable to widely disparate audiences, stakeholders and interested parties**
  - **Means to graphically identify key regulatory compliance requirements to critical geographic areas and reference requirements, impacts, issues and controls**

- **Graphically demonstrate locations of areas and conditions requiring or conducting preventive or corrective actions**
- **Provide linkages to records with graphical links and descriptions**
- **Provide training and information tools to internal auditors for scheduling, conducting and tracking audits**
- **Providing accurate and summarized information in easily understandable graphical manner to top management during management reviews**
- **Facilitating fact-based decisions by top management**
- **More easily communicating NEPA, EMS and Sustainability to top management for decision-making and performance improvement efforts**

### **Item 1.c Deliverable - Linking Geo-Spatial Tools and EMS Planning and Management of Change Process to Identify Actual and Potential Negative and Positive Environmental Impacts to Improve Environmental Performance**

**Geo-Spatial Tools are useful communication tools as they can help stakeholders “see” the potential effects of decisions and various potential outcomes.**

Geo-Spatial Tools are comprised of computer software programs and databases that produce digital outputs such as maps, charts, graphs, pictures and diagrams. The programs link to graphical information system (GIS) databases and other databases. Importing existing data into the Fort Lewis GIS from existing program files could promote increased sharing and communication of environmental information.

Presenting the data through the GIS could enhance the identification and communication of actual and potential environmental impacts resulting from existing or planned activities. Linking to other databases could provide rich detail of geographic and human-made structures and help identify, analyze and monitor actual and potential environmental impacts and aspects. These Geo-Spatial tools could be used to accomplish the following:

- **Graphically describe individual environmental impacts and the relationships among multiple impacts and aspects**
- Graphical represent EMS Significant Aspects and Impacts and Operational Controls
- **Graphically demonstrate how changes in activities and processes may cause impacts elsewhere inside and outside the Fort Lewis boundaries**
- Provide a database with graphical outputs demonstrating relationships between Sustainability Goals, EMS Objectives, and NEPA Approved Actions
- Graphical represent the linkages between NEPA and EMS objectives and monitoring and measurement and data collection activities

Linking these Geo-Spatial tools to EMS planning can offer significant benefits in fostering communication and understanding and mitigating actual and potential environmental impacts and controlling significant aspects. In order to best link the Geo-Spatial tools into the EMS planning process and produce the above outputs Fort Lewis should consider making the following changes to include use of Geo-Spatial tools and GIS database capability in the Fort Lewis EMS procedure “Identification of Environmental Aspects and Impacts” (Document ID: EMS-210):

#### ***EMS Management Representative - Action 1:***

Instead of a “committee” organized every three years, enfranchise a cross-program, cross-functional Team with on-going, chartered responsibility for EMS implementation and continual improvement. The Program Managers, supplemented by other subject matter experts, may make an effective Team for this purpose. The Team should meet at least annually. More frequent, e.g. quarterly meetings might be better. In this manner



intermittent NEPA Actions and Environmental Management Plans could be evaluated more frequently with closer coordination and improved focus.

***EMS Management Representative - Action 2:***

Initiate use of Geo-Spatial tools during planning. Use charts, diagrams, pictures, maps, etc. to describe the processes, activities and services that will be evaluated. Also, use the same tools to represent new or expanded actual and potential impacts. Train the Team to use these tools to evaluate and rank the impacts.

***EMS Management Representative – Action 3:***

Use the Geo-Spatial Tools to identify and define needed objectives and targets and to track progress on management programs and Action Plans developed to achieve the objectives and meet the targets.

***EMS Management Representative – Action 4:***

Use the Geo-Spatial tools to enhance the communication of the Significant Aspects during Management Review.

***EMS Management Representative – Action 5:***

Communicate Significant Aspects during the NEPA/Sustainability Deconfliction Charrette Process.

***Process Analysis Committee – Action 1:***

Modify the committee described in ***EMS Management Representative – Action 1*** above. Obtain support of the EMS Management Representative for use of Geo-Spatial tools to analyze impacts and aspects. Score and rank the impacts and recommend Significance.

***Chief, ENRD and selected ENRD Program Managers – Action 1:***

Use the Geo-Spatial tools to:

- 1) Organize the data and produce graphical outputs
- 2) Graphically describe actual and potential impacts and aspects
- 3) Model potential actual and potential impacts within the boundaries of Fort Lewis inside the scope of the EMS.
- 4) Model actual and potential effects of aspects/impacts on neighbors and tenants

**Item 2.e. Deliverable - Specify within these processes (defined in SOW Task 1) how the Geo-Spatial Tools demonstrate that NEPA objectives are aligned with EMS objectives, Sustainability initiatives, Fort Lewis operating objectives, the Strategic Readiness System, the ISR, and environmental performance improvement efforts.**

Geo Spatial tools also offer an opportunity to demonstrate graphically the relationship between NEPA procedures and EMS elements. In addition, Geo Spatial tools can provide significant efficiencies for sharing and using data. The following describes how Geo-Spatial Tools could demonstrate relationships and linkages and be more useful if integrated into the NEPA, EMS and Sustainability and business processes. A table in Attachment E provides a graphical representation of the potential to align these management elements, processes, objectives and improvement efforts.

Currently, Geo-Spatial Tools at Fort Lewis do not demonstrate that NEPA objectives are aligned with EMS objectives, Sustainability initiatives, Fort Lewis operating objectives, the Strategic Readiness System, or

environmental improvement efforts. The following text in conjunction with the alignment table describes how this could be accomplished and demonstrated and is represented in the proposed model process.

- In the Model NEPA/EMS/Sustainability Integrated Process (*SOW Task 1.a.*), Geo-Spatial tools are embedded in 14 of the Process activities.
- Geo-Spatial tools are first used to help the Sustainability Teams and Stakeholders develop Sustainability Goals (*see deliverable for 1.a. "Opportunities for Increased Use of Geo-Spatial Tools in the Model Integrated Process"*).
- Sustainability Goals and Initiatives are inputs to the Deconfliction Charrette process where they are considered in relation to the accomplishment of NEPA Objectives;
  1. Transform Proposed NEPA Actions into Approved NEPA Actions
  2. Assess Impacts
  3. Manage Impacts
  4. Outreach to Internal and Extern Interested Parties
- During Deconfliction Charrette and the Development of Alternatives, Sustainability Goals and Initiatives are considered as NEPA Proposed Actions are developed by the NEPA Practitioner and the Mission or Base Operations Proponent.
- Geo-Spatial tools are used to graphically represent the relationship between the proposed NEPA Actions, Sustainability Goals and Initiatives and operating objectives.
- NEPA Alternatives are developed with support of interdisciplinary teams using the Geo-Spatial tools to compare the scope and effects of NEPA Alternatives.
- The NEPA Practitioner in collaboration with the Proponent and one or more Program Managers identifies potentially impacted environmental resources using maps and other outputs from the GIS database.
- Outputs from the identification of potentially impacted resources are provided to the EMS Management Representative for inclusion in the EMS Planning Process.
- Making use of Geo-Spatial outputs of the previous activities, the EMS Management Representative conducts side-by-side comparison of Sustainability Goals and Initiatives, Proposed NEPA Actions, Operational Objectives and existing EMS Objectives to determine conflicts, consistency and alignment.
- The Division Chief compares GIS data on Sustainability Goals and Initiatives with the EMS key characteristics and the measures used to evaluate environmental performance and the measures used in the Fort Lewis Strategic Readiness System (SRS) to assure alignment of all measures.
- The EMS Planning Cross-Program/Cross-Functional Team then examines this analysis and recommends changes, additional objectives and additional or modified environmental performance improvement efforts.
- The comparison will identify existing linkages and new opportunities for integrating EMS and Sustainability measures with the SRS and its measures.
- The results of the analysis is reported by the EMS Management Representative to top management and the Proponent during Management Reviews by using the Geo-Spatial Tools of maps, pictures, charts and diagrams.

- In this manner, the Geo-Spatial Tools help the Proponent, NEPA Practitioner, Sustainability Teams, Program Managers, Interdisciplinary Teams, EMS Planning Team and Management Review participants demonstrate and improve the alignment of Sustainability Goals and Initiatives, NEPA objectives, EMS objectives, environmental performance improvement efforts, Fort Lewis operating objectives and the Strategic Readiness System.

**Item 2.f. Deliverable - Describe how the processes defined above (Items 1a.b.c.) above guide coordination and integration of NEPA programs with EMS development and Management of Change efforts.**

**Implementing the Fort Lewis integrated model can increase coordination and deeper integration of EMS elements and NEPA program procedures, particularly with the EMS Planning and Management of Change process. NEPA can provide valuable input into the Planning process on intermittent changes in facility operating conditions and practices. The following describes how the Fort Lewis Integrated Model Process takes advantage of NEPA impact analyses within EMS planning.**

- The processes developed in Task 1 describe the flow and guide the coordination of NEPA and EMS activities, processes and programs by making explicit the linkages between NEPA and EMS activities.
- In the model process NEPA proposed actions and alternatives are inputs to the EMS Planning Process and other EMS elements.
- NEPA actions are intermittent in nature, averaging ten environmental assessments a year.
- The EMS Planning Process is now conducted every three years.
- As proposed in the Project Deliverable addressing SOW item 1.c., EMS Planning would be conducted at least annually.
- As a result, at least annually, a year's amount of NEPA proposed actions would be evaluated as part of EMS Management of Change efforts involving these intermittent changes in Fort Lewis activities and services.
- Although not explicitly indicated within the high-level Model Process, a suggestion is made in the Project Deliverable addressing SOW item 1.c., that an on-going, cross-functional, cross-program team be chartered with responsibility for more frequent, e.g. annual or quarterly, meetings.
- This Team would evaluate and assist the EMS Management Representative with EMS implementation and continual improvement of performance.
- The team would be involved in providing recommendations to Management Reviews.
- Therefore NEPA proposed actions and analysis would be an input to EMS Planning more as the actions are proposed by the Proponent and evaluated by the NEPA Practitioner, Program Managers, and others.
- The Model also calls for integration of NEPA Actions with EMS activities in the EMS Implementation and Operation element. This will further serve to guide coordination and integration of NEPA actions, Management Plans and programs with EMS Management of Change efforts.

**Item 2.g. Deliverable - Define a means to communicate how the processes and the Geo-Spatial Tools can help achieve environmental objectives and improve environmental performance and how they can be best used by interested parties.**

**Geo-Spatial Tools can make it easy to communicate and promote understanding of seemingly separate and complex issues among diverse groups of technical and operations personnel and other stakeholders. The following describes a means to use Geo-Spatial Tools to communicate with these groups and individuals. The text is supported by an example training presentation in Attachment F.**

- Description of likely audiences for the information presented.
- Examples of how the audience segments could access and use the Geo-Spatial tools.
- List of current environmental objectives.
- Description of current environmental performance.
- Description of available Geo-Spatial Tools and examples.
- Description of the Data-collection process and how data on objectives and their status is collected, analyzed, stored and communicated to interested parties.
- Presentation slide of the Model Integrated Process.
- Presentation slide of the process for developing Environmental Management Plans in EMS format.
- Paper handouts of the process diagrams and certain other text materials such as the list of "Opportunities for New Uses for Geo-Spatial Tools."
- Work through each step of the processes describing how the specific activities are designed to develop and achieve objectives and/or improve performance.
- Describe the opportunities for new uses of Geo-Spatial Tools in the Model Integrated Process diagram represented by the red flags.
- Refer to the Deliverable for SOW Items 1.a. and d. and describe and discuss these opportunities.
- Determine which opportunities seem most interesting to the audience.
- Description of how objectives are achieved through the existing process.
- Description of how objectives would be achieved under the proposed processes.
- The role of Environmental Management Plans in achieving objectives.
- Examples of Geo-Spatial Tools providing visual descriptions of objectives and the status of achieving them over time.
- A description of how environmental performance is currently presented to interested parties.
- Examples of Geo-Spatial Tools providing visual descriptions of current environmental performance.

- Give Bench Mark examples of the best uses of Geo-Spatial Tools.
- Another means would be to maintain the electronic files of the processes and text documents on the Fort Lewis intranet.
- Fort Lewis PW could offer an electronic version of the above presentation elements in a read only format that would allow the person to work through the presentation and processes electronically at their own pace.
- The electronic digital diagrams and text documents could be linked to the presentation such that a link could be clicked on and the linked document would appear.

**Item 3.h. Deliverable – an effective risk assessment method that can be used to identify actual and potential problems.**

The method provided is a modified version of the Army’s EMS aspect and impact significance determination procedure. Fort Lewis Public Works Environmental management recognized that a previously tested procedure requiring only slight modification would better serve their needs. The suggested method is in Attachment G.

**Item 3.i Deliverable – Identify lead and lag performance measures that can be incorporated within the Strategic Readiness System and Balanced Score Card (BSC) tool.**

The example Lead and Lag measures were developed for the existing Sustainability Goals which had presented challenges related to finding effective measures. These measures could be incorporated within the Strategic Readiness System. The example Lead and Lag measures for the Fort Lewis Sustainability Goals are provided in Attachment H.

**Item 3.i Deliverable – Training presentation on BSC essentials and potential implications for operations.**

The training presentation is designed to provide a summary of Army performance measurement practices based on the BSC approach. Additionally, Fort Lewis wanted the training to include key elements of the Legacy Project with particular emphasis on the development of Environmental Management Plans in the EMS element format and the opportunities for improving environmental management performance through better measurement and data management practices. The training presentation is included in Attachment I.

## Strategic Plan and Guide

**Item 7.1 Strategic Plan to include process for integration of GIS, EMS and the NEPA Program as described in the above items**

**Item 7.2.b Guide that outlines a method to integrate NEPA to EMS for application by other military installations (DOD Facilities)**

Integrating NEPA, EMS and Sustainability Goals and increasing use of Geo-Spatial Tools can help DOD facilities meet the requirement in EO 13148 to implement an EMS as well as capture efficiencies by integrating and aligning on-going sustainable conservation initiatives with other goals, programs, plans, and processes.

The “Guide” for integrating NEPA and EMS for other DOD facilities resides in the Fort Lewis Model High-Level Integrated Sustainability, EMS and NEPA Environmental Assessment Process Diagram in Attachment B and in the elements of the example “Strategic Plan” below.

### Example Strategic Plan and Guide

**Facility Strategic Outcome:** By December 31, 2008, integrate NEPA, EMS and Sustainability Goals within an operated, maintained and auditable DOD facility environmental management system to execute effective and efficient support for the installation’s mission.

**Facility Strategic Objective:** Develop a process to integrate NEPA, EMS and Geo-Spatial Tools, Sustainability Goals and engage the parties necessary for effective and efficient execution of environmental management in support of the facilities mission.

**Facility Strategic Objective:** Using Geo-Spatial Tools, demonstrate an auditable, efficient and effectively executed facility Environmental Management System integrating NEPA, EMS and Sustainability Goals.

### Tactical Execution of the Strategic Plan

- Define the facility baseline process
- Identify and consult Subject Matter Experts at facility
- Use the Fort Lewis Model Process as a guide to identify participants and activities
- Follow steps outlined in the Fort Lewis Model Process
- Consider adopting the Fort Lewis Deconfliction Charrette process using Geo Spatial Tools as part of facility planning process for NEPA, EMS and Sustainability Goals
- Develop a plan for formalizing a similar Deconfliction Charrette process
- Integrate the Deconfliction Charrette process as an essential part of Sustainability, EMS and Environmental Management Programs planning and execution
- Evaluate effectiveness of opportunities to use Geo-Spatial Tools to help improve environmental performance identified by red flags in the Fort Lewis Model Process and described in Legacy Project Deliverable *Item 1.a.b.c.*
- Define high-level NEPA, EMS and Sustainability Goal process
- Define Deconfliction process
- Define process for developing Management Plans in EMS format
- Develop process detail
  - a. Define activities

- b. Define tasks
  - c. Obtain input from program managers and other interested parties
  - d. Identify and define actual and potential issues
  - e. Develop effective solutions to actual and potential issues
  - f. Integrate NEPA, EMS and Sustainability planning, Checking, Corrective Action and Management Review elements
  - g. Assure all processes and activities support approval of Proposed Actions
  - h. Evaluate process capability for providing sound data for better decisions
- Align program and process outputs, objectives and measures with mission goals
  - Use Geo-Spatial Tools in data collection and measurement processes
  - Validate processes with Subject Matter Experts and Environmental Management Representatives
  - Develop Environmental Management Plans in EMS format
  - Validate Deconfliction and integrated process with a large universe of participants
  - Beta Test the integrated process and refine as necessary
  - Share your Lessons Learned and Best Practices with others

For additional information contact:

Bill Van Hoesen  
 NEPA Program Manager  
 Fort Lewis Public Works  
 Phone: 253-966-1780  
 Fax: 253-966-4985  
 Email: bill.vanhoesen@us.army.mil

## Attachment A

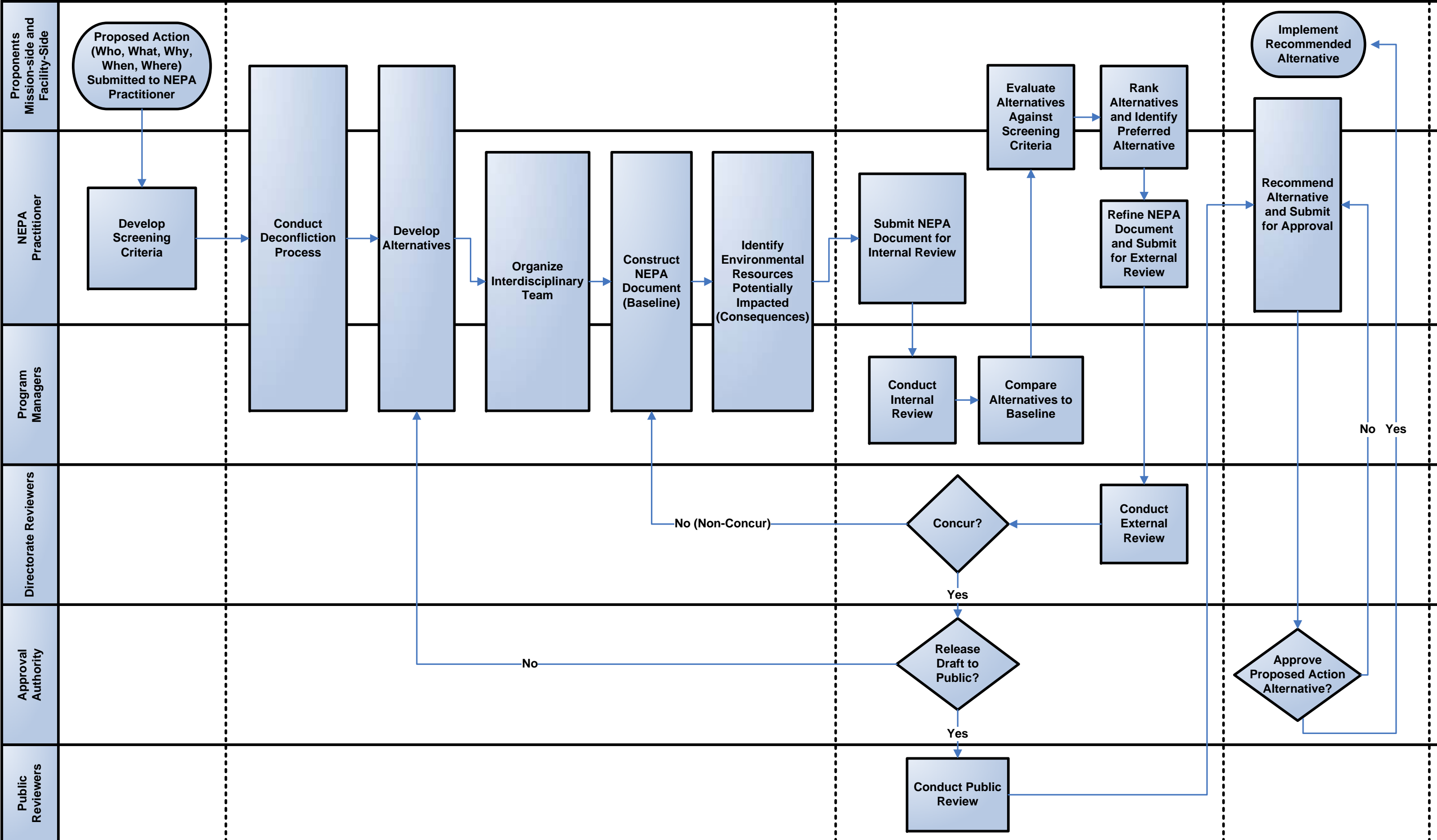
### NEPA Environmental Baseline Process Diagram





Legacy Project Deliverable for SOW Task 1.a  
**Ft. Lewis NEPA Environmental Assessment Baseline Process**

Initiation      Planning      Evaluation      Recommendation





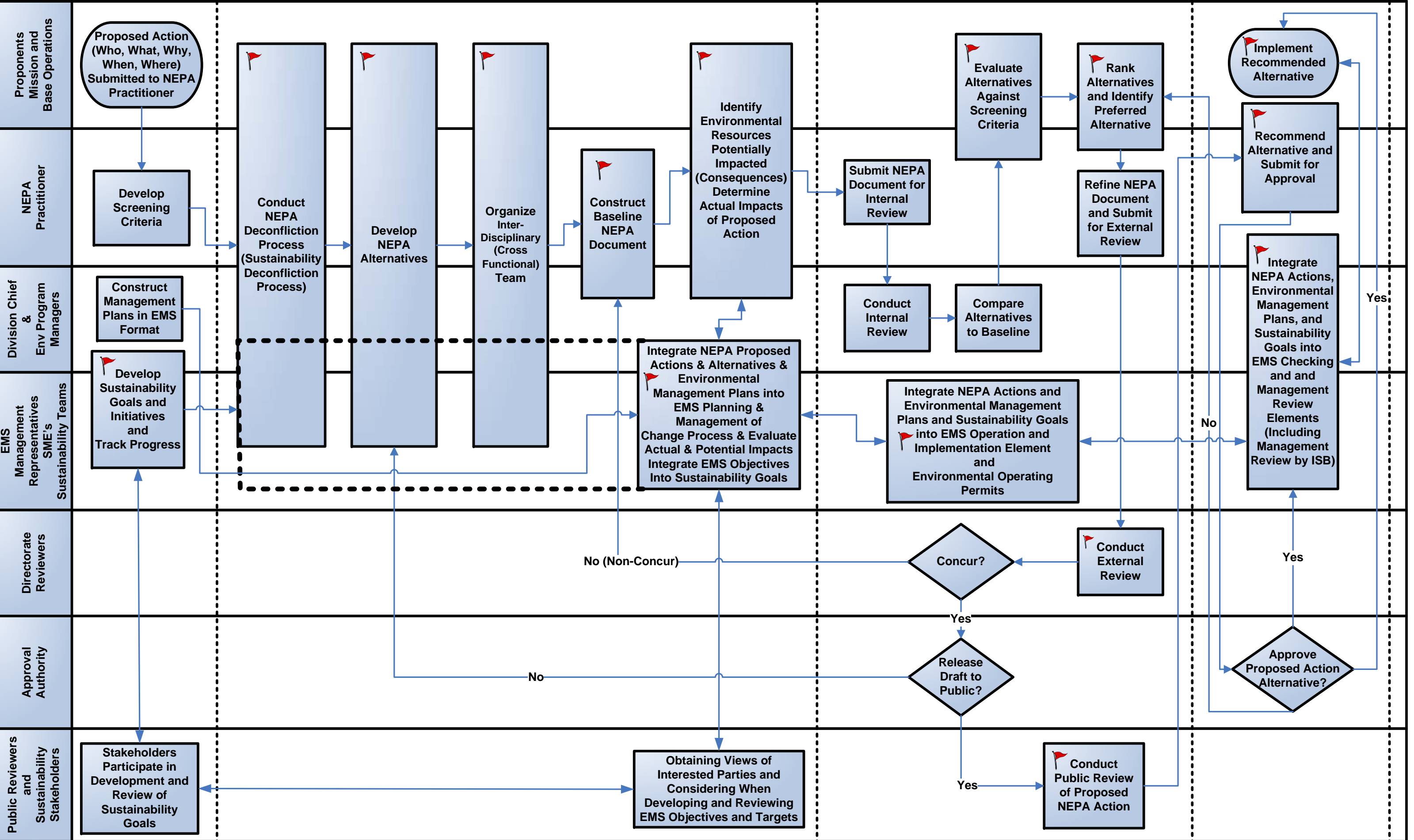
## Attachment B

Fort Lewis Model High-Level Integrated Sustainability, EMS,  
and NEPA Environmental Assessment Process Diagram



Legacy Project Deliverable for SOW Task 1.a. and c.  
 Ft. Lewis Model High-Level Integrated Sustainability, EMS and NEPA Environmental Assessment Process

Initiation      Planning      Evaluation and Operation      Action and Review





## Attachment C

### Fort Lewis Deconfliction Charrette Process Diagram





# Ft. Lewis Deconfliction Process

Screen

Communicate

Evaluate

Proponent

Proposal

Rejected

No

Screeners

Consider Proposal

Accepted ?

Yes

Deconfliction Manager

Request for Garrison Review

Schedule Deconfliction Meeting

Notice of Deconfliction Meeting to Participants

Division Chief and Program Managers

EMS Management Reps SD Teams and SME's

Directors and Approval Authorities

**Conduct Deconfliction Meeting to Discuss Courses of Action, Impacts and Mitigation (Reference Land Use Deconfliction Process for Ft. Lewis, Washington)**

- 1) Deconfliction Manager Sets Agenda
- 2) Geo Spatial Tools used to:
  - a. Identify the context of the Proposed Action
  - b. Identify and describe intensity of the effects of the Proposed Action
- 3) Breadth of Effects Explored with Environmental Management Representatives
- 4) Actual and Potential Effects of Proposed Action Identified for Each Environmental Management Representative
- 5) Linkages to Sustainability Goals Identified and Evaluated
- 6) Monitoring of Intensity of Impacts and Progress on the Mitigation
- 7) Data Collection, Organizing and Reporting Requirements Defined
- 8) Screeners Determine Outcome of Proposal

Proposal Returned to Proponent for Major Changes and Resubmittal

Proposal Approved with Recommendation for Minor Changes and Sent to Proponent for Modification

Proposal Recommended for Approval with No Changes

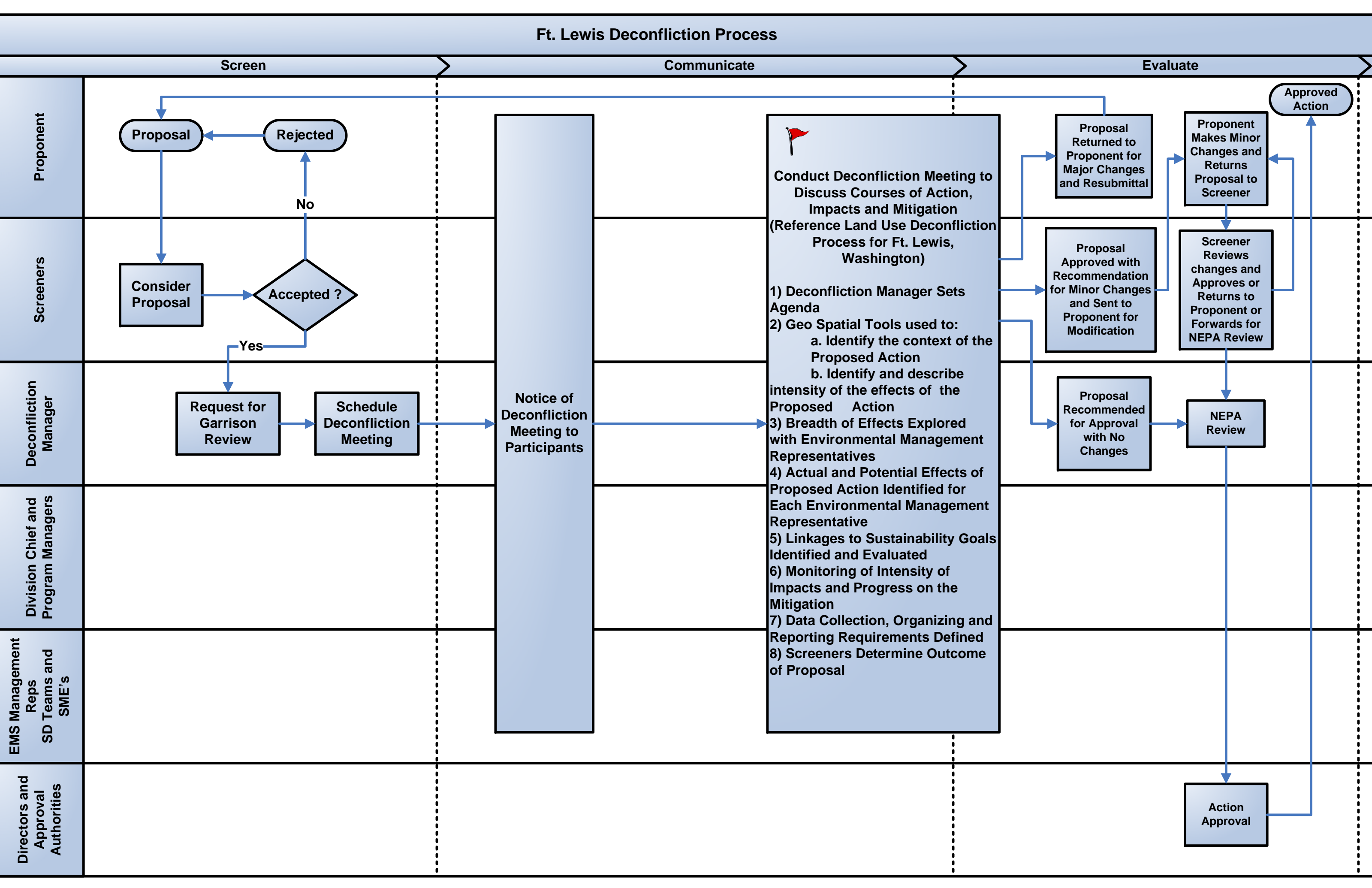
Proponent Makes Minor Changes and Returns Proposal to Screener

Screener Reviews changes and Approves or Returns to Proponent or Forwards for NEPA Review

NEPA Review

Action Approval

Approved Action



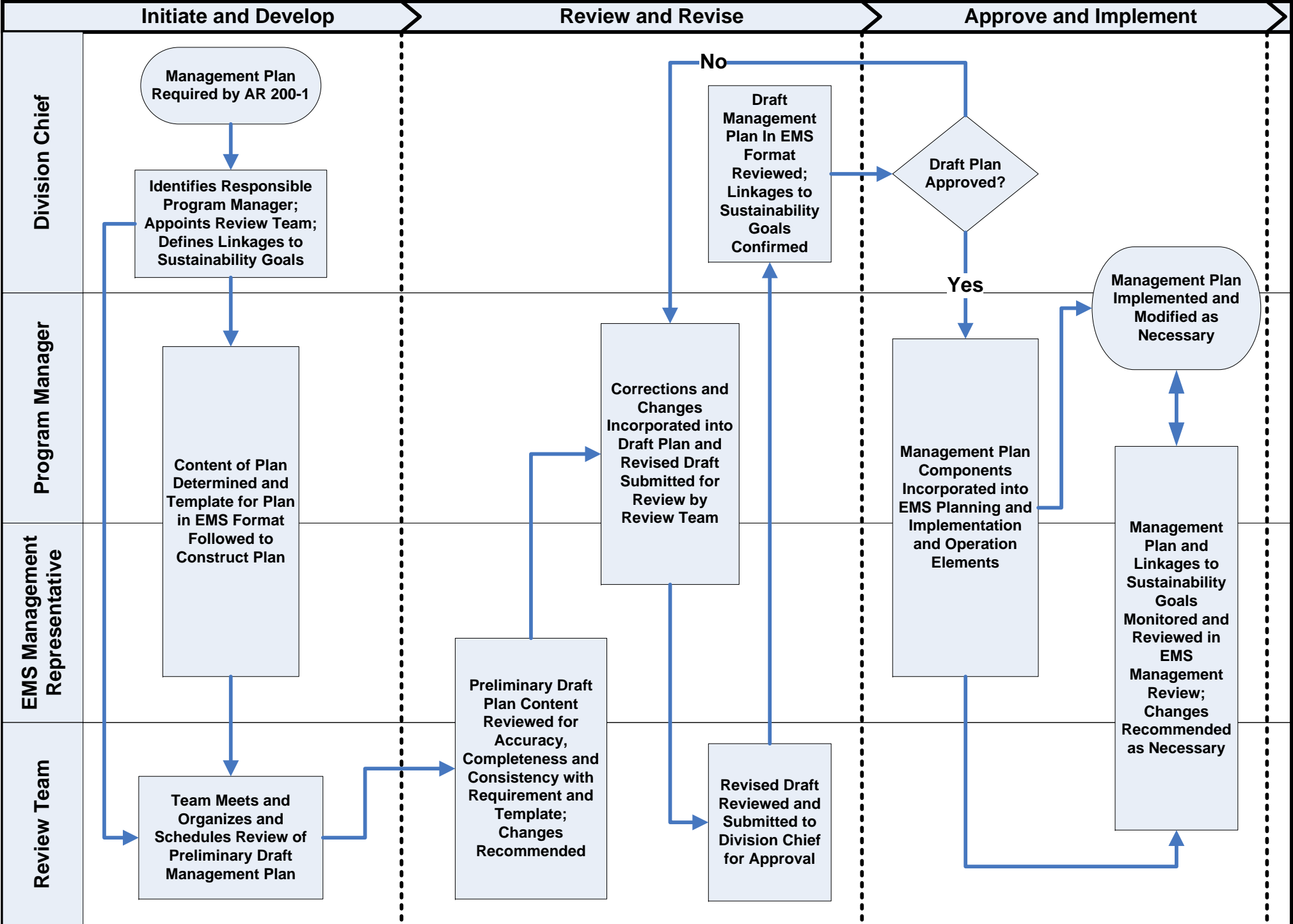


## Attachment D

Fort Lewis Model Process for Producing Environmental  
Management Plans in EMS Format Diagram



## Ft. Lewis Model Process for Producing Environmental Management Plans in EMS Format





## Attachment E

Table Demonstrating How Geo-spatial Tools Could Facilitate  
Alignment









## Attachment F

Presentation Example Communicating How Geo-spatial  
Tools Can Help Achieve Environmental Objectives and  
Improve Environmental Performance



# Deliverable for SOW Item 2.g.

Communicating how the processes and Geo-Spatial Tools can help achieve environmental objectives and improve environmental performance and how they can best be used by interested parties

# Audience Segments

- Management Review
- Public Works
- Mission Side
- Operations Side
- Military
- Civilian
- External Stakeholder/Interested Party

# Handouts

- Provide paper handouts of the process diagrams
- Provide copies of the text such as the template for producing Management Plans in EMS format
- Provide copies of outputs of Geo-Spatial Tools:
  - Charts
  - Diagrams
  - Maps
  - Pictures



# Access and Use Geo-Spatial tools

- Location of Tools on Fort Lewis Intranet
- Screen shots showing how to access and use

# Examples of Geo-Spatial Tools

- Map
- Picture
- Chart
- Graph
- Diagram
- Demonstration of GIS

# Current Environmental Performance

- Charts and graphs demonstrating trends in environmental performance measures
- Charts and graphs showing progress on environmental objectives
- Charts and graphs showing progress on Environmental Management Plans

# How Is Data Collected

- Description of the Data-collection process and how data on objectives and their status is collected, analyzed, stored and communicated to interested parties

# Data Transformed Into Information

- Describe the measurement process
- Show how data is transformed into information and communicated to audiences

# List of current environmental objectives

- Objective 1:
- Objective 2:
- Objective 3:
- Objective 4:
- Objective 5:
- Objective 6:

# Presentation slide of the Model Integrated Process

- Go step by step through the process
- Describe how objectives are developed
- Describe how EMS management programs (Action Plans) are developed to achieve objectives
- Describe how the activities are designed to develop and achieve objectives and improve performance
- Describe how objectives and Action Plans are monitored

# Environmental Management Plans

- Describe how the Environmental Management Plans are developed in the EMS format
- Describe how the Management Plans include objectives
- Show how EMS management programs (Action Plans) are developed to achieve Objectives of the Management Plans
- Show how Management Plan objectives are monitored and reviewed in Management Review



# New Opportunities for Use of Geo-Spatial Tools

- Describe where in the Model Integrated Process diagram there are new opportunities to use Geo-Spatial tools in the represented by the red pennants
- Use the text description (SOW Items 1.a. and d. Deliverables) of these opportunities
- Ask the audience if they can think of others

# Achieving Objectives

- Describe how objectives are achieved through the existing process
- Describe how objectives would be achieved under the proposed processes

# Environmental Management Plans

- Describe how Environmental Management Plans help achieve objectives
- Provide examples of Geo-Spatial tools providing visual descriptions of objectives and the status of achieving them over time

# Environmental Performance

- Describe how environmental performance is currently presented to interested parties
- Give examples of Geo-Spatial tools providing visual descriptions of current environmental performance

# Using Geo-Spatial Tools

- Give Bench Mark examples of how others use Geo-Spatial tools
- Describe “Best Practices” with Geo-Spatial Tools
- Give examples of how each audience segment can use the tools

# Using Geo-Spatial Tools

- Management Review participants
  - Tracking sustainability initiatives towards goals
  - Tracking EMS management programs and objectives
- Public Works
  - Monitoring EMS performance
  - Improving processes
  - Improving Environmental Management Plan effectiveness
- Mission Side
  - Maintaining boundaries between off-limits areas
  - Identifying proper training areas

# Using Geo-Spatial Tools

- **Operations Side**
  - Identifying optimal locations for new buildings
  - Tracking energy generation efforts
- **Military**
  - Understanding potential impacts of proposed NEPA Actions
  - Selecting alternatives with more sustainable effects
- **Civilian**
  - Monitoring performance on EMS objectives
  - Identifying optimal prevention of pollution strategies
- **External Stakeholder/Interested Party**
  - Understanding extent of Fort Lewis environmental footprint
  - Identifying effective Sustainability Goals and Initiatives
  - Identifying effective buffer zones

# Electronic Availability

- Maintain electronic files of the processes and text documents on the Fort Lewis intranet.
- Offer an electronic version of the presentation in a read only format to allow a person to work through the presentation and processes electronically at their own pace.
- Link the electronic digital diagrams and text documents with the presentation such that a document will appear with a click
- Offer classes on use of the GIS/Geo-Spatial Tool system



# Electronic Availability

- Place link to the tools on the Fort Lewis website
- Provide simple tutorials
- Ask for feedback from users
- Link the feedback into the EMS Planning and Management Review processes
- Modify the training as necessary
- Continually improve the tools and the outputs

## Attachment G

### Effective Risk Assessment Method





- 1) Each EMS participant will list their impacts in the Impacts Column.**
- 2) Calculate the scores for each impact using the criteria and the relevant considerations listed for each category on the previous sheets.**
- 3) The spreadsheet will calculate the Significance Ranking Score.  
(Significance Calculation: Environmental Risk (L X S) X (Regulatory Status+ Mission Effect + Community Concerns+ Cost) = Significance Score)**
- 4) A threshold score will be selected, at or above which a score is significant.**
- 5) Some organizations consider all regulated Aspects, aspects not in compliance, and aspects with an impact scoring a 4 or 5 in the Mission Degradation category to automatically be considered significant.**

Army Significance Criteria	Air Force Significance Criteria					
	Relative Cost	Environmental Risk		Regulatory Implications (If a regulated aspect is not currently in compliance consult with the EMS EMR)	Potential Mission Degradation (Impacts scoring a 4 or 5 on the Mission Impact Scale are automatically significant)	Community Concern
		Likelihood (L)	Severity (S)			
Cost of Mitigation (and potentially the ROI of the cost to mitigate) (from Business Considerations)	<b>X</b>					
Likelihood (L)		<b>X</b>				
Severity (S)			<b>X</b>			
Regulatory Impact				<b>X</b>		
Effect on Mission					<b>X</b>	
Community Concerns						<b>X</b>
Significance Calculation: Risk (L X S) X (Regulatory + Mission + Community + Cost) = Significance Score						
If the Significance Score is above the Significance Threshold, the impact is Significant						

## Significance-Criteria Guidance Comparison

<b>Army: Risk Frequency or Likelihood</b>	
<p><b>5 = Continuous - event, incident or nonconformance ongoing or daily</b></p> <p><b>4 = Frequent - event, incident or nonconformance more than once per month</b></p> <p><b>3 = Infrequent - event, incident or nonconformance more than once per year, less than once per month</b></p> <p><b>2 = Rare - event, incident or nonconformance may occur once every year or two</b></p> <p><b>1 = Never - event, incident or nonconformance never occurred or highly unlikely</b></p>	
<b>Army = Severity</b>	
<p><b>5 = Severe - immediate threat likely to result in widespread damage to human health, the environment or mission achievement/support; requires great effort to remediate, mitigate or correct</b></p> <p><b>4 = Serious - no immediate threat, but significantly damages the environment, personnel or mission support; difficult but possible to remediate</b></p> <p><b>3 = Moderate - somewhat harmful, but correctable</b></p> <p><b>2 = Mild - small potential for harm to environment, personnel or mission support, correctable</b></p> <p><b>1 = Insignificant - trivial consequences, easily correctable or no impact or effect on personnel or the mission</b></p>	

### Considerations

- Proximity of the impact to people or environmental sensitive areas**
- Toxicity of substances involved**
- Quantities of substances involved**
- Effects from startup and shutdown conditions**
- Duration of exposure or effects**
- Size of the area affected**
- Potential for migration of the incident, effect, hazard or impact**

	<b>Army</b>	
	<b>Regulatory Status</b>	
	<p><b>5 = Regulated or customer requirement - nonconformity resulting in negative effect on mission capability; noncompliance condition; actual or possible enforcement action or NOV</b></p> <p><b>4 = Regulated or customer requirement - generally in compliance or conformity but not completely controlled or managed; some risk of noncompliance or nonconformity in future, or under scrutiny by regulators or evaluated by customer.</b></p> <p><b>3 = Regulated or customer requirement - in compliance or conformance, well controlled or managed; little regulator or customer interest.</b></p> <p><b>2 = Likely to be regulated in future by federal, state, or host nation agency; may become customer requirement.</b></p> <p><b>1 = Best management practice (BMP) applies.</b></p> <p><b>0 = No requirements apply.</b></p>	
	<b>Factors for Consideration</b>	
	<p><b>Situations involving a high risk of noncompliance or nonconformity demand increased priority.</b></p>	



	<b>Army</b>	
	<b>Mission Impact Severity</b>	
	<p><b>5 = Loss of ability to accomplish critical mission or near mission failure</b></p> <p><b>4 = Severely degraded mission capability or serious mission restrictions</b></p> <p><b>3 = Moderate mission restrictions</b></p> <p><b>2 = Minor mission impacts or restrictions</b></p> <p><b>1 = Insignificant mission impacts or restrictions; alternate courses of action are available</b></p> <p><b>0 = No mission impacts or restrictions</b></p>	
	<b>Factors for Consideration</b>	
	<p><b>Priority or importance of the impacted missions</b></p> <p><b>Restriction of specific activities (digging, using smoke, etc.)</b></p> <p><b>Duration restrictions (such as limiting boiler operations to 12 hours per day)</b></p> <p><b>Permanent versus temporary closure or restrictions of training areas or industrial processes</b></p> <p><b>Availability of alternative training sites or training techniques</b></p>	

	<b>Army</b>	
	<b>Community Concerns</b>	
	<p><b>5 = Legal action by affected parties</b></p> <p><b>4 = Wide-spread public discontent</b></p> <p><b>3 = Serious local community concern, political or activist inquiries, intense negative media (Garrison Command or Public Affairs has received complaints)</b></p> <p><b>2 = Moderate community concern, some media coverage; Complaints received; No media involved)</b></p> <p><b>1 = Community is not currently concerned, but could become so.</b></p> <p><b>0 = Community is ambivalent or unconcerned.</b></p>	
	<b>Factors (Actions or Situations) for Consideration</b>	
	<p><b>Law Suits</b></p> <p><b>Political obstruction</b></p> <p><b>Negative or positive press coverage</b></p> <p><b>Number and scope of citizen complaints</b></p> <p><b>Community-generated political or regulator interest</b></p> <p><b>Level of positive interaction with the local Community</b></p>	

## Significance-criteria Guidance

	<b>Army</b>	
	<b>Army: Cost and ROI of cost to mitigate</b>	
	<b>No Factors in Guidance but one organization selected the following</b>	
	<b>5 - Not in budget, Required by law to pay; Loss of ability to accomplish mission</b>	
	<b>4 - Not in Budget; must ask DOA to pay</b>	
	<b>3 - Not in budget - can move \$ from others to cover</b>	
	<b>2 - Not in budget - must budget in future to cover</b>	
	<b>1 - Normal operation cost within established budget</b>	

## Attachment H

### Lead and Lag Performance Measures for Sustainability Goals



Sustainability Goal	Indicator	Measures	Type
Reduce installation traffic congestion and air emissions by 85% by 2025	Annual vehicles registrations	Total Number per month/year	Lag
	Vehicles passed through checkpoints	Total Number per month	Lead
	Annual variation from baseline	% Increase/decrease per month	Lead
Reduce air pollutants from training without a reduction in training activity	Annual variation from baseline in total load	Tons per 1000 troops trained	Lead and Lag
Reduce stationary source air emissions by 85% by 2025	Annual quantity of emissions from stationary sources	Tons per year	Lag
		Number of stationary sources eliminated/added each year	Lead
Sustain all activities on post using renewable energy sources and generate all electricity on post by 2025	Type of renewable energy sources on post	KWH of electricity generated by renewable energy sources on-site annually	Lag
All facilities adhere to the LEED/SPIRiT Platinum standard for sustainable facilities by 2025	Facilities meeting LEED/SPIRiT standard each year	% change from baseline	Lag
Cycle all material use to achieve zero net waste by 2025	Shift from disposal materials to cyclable materials	% change from baseline	Lag
		# Tons disposed	Lag
Attain healthy, resilient Ft. Lewis and regional lands that support training, ecosystem, cultural and economic values	Defined ideal model representing goal	#/% change in acres from ideal land mix characteristics	Lag
Recover all listed and candidate federal species in the South Puget Sound Region	Populations of listed species	% Increase/decrease per	Lag
Zero Discharge of Water by 2025	Annual variation from baseline	# gallons increase/decrease	Lag
	Construction of wastewater treatment facilities with zero discharge	#/% increase of treatment capacity	Lead
Reduce Ft. Lewis potable water consumption 75% by 2025	Rate of water consumption	#/% increase/decrease of potable water consumption from baseline annually	Lead
	Water conservation initiatives	# gallons Initiatives designed to reduce	Lead
Ft. Lewis contributes no pollutants to groundwater and has remediated all contaminated groundwater by 2025	Pollutant types in groundwater	# gallons of groundwater treated	Lag
		% change from baseline	Lag
Develop an effective regional aquifer and watershed management program by 2012	Goals of watershed management program	#/% goals accomplished on schedule	Lead and Lag



## Attachment I

### Training Presentation on BSC Essentials and the Legacy Project





# **Fort Lewis Legacy Project**

## **Integrating NEPA, EMS, Sustainability and Environmental Management Programs**

**July 12, 2006**

**Mick Bilney, MBA**

**Program Director, Management Consulting and Systems**

**Frontier Environmental Services, Inc.**

**Wheat Ridge, CO**

**303-234-9350**

**[mickbilney@frontierenvironmental.net](mailto:mickbilney@frontierenvironmental.net)**

# Agenda

- **Background**
- **Mission Linkages and BSC Essentials**
- **Operational and SRS Measures and the BSC**
- **Linkages to Strategic Readiness System (SRS)**
- **Summary of Legacy Project**
- **Environmental Management Plans**
- **Potential Implications for Operations**
- **Lead and Lag Performance Measures**
- **Summary**

**\* Most SRS/BSC slides were obtained from David Eady**

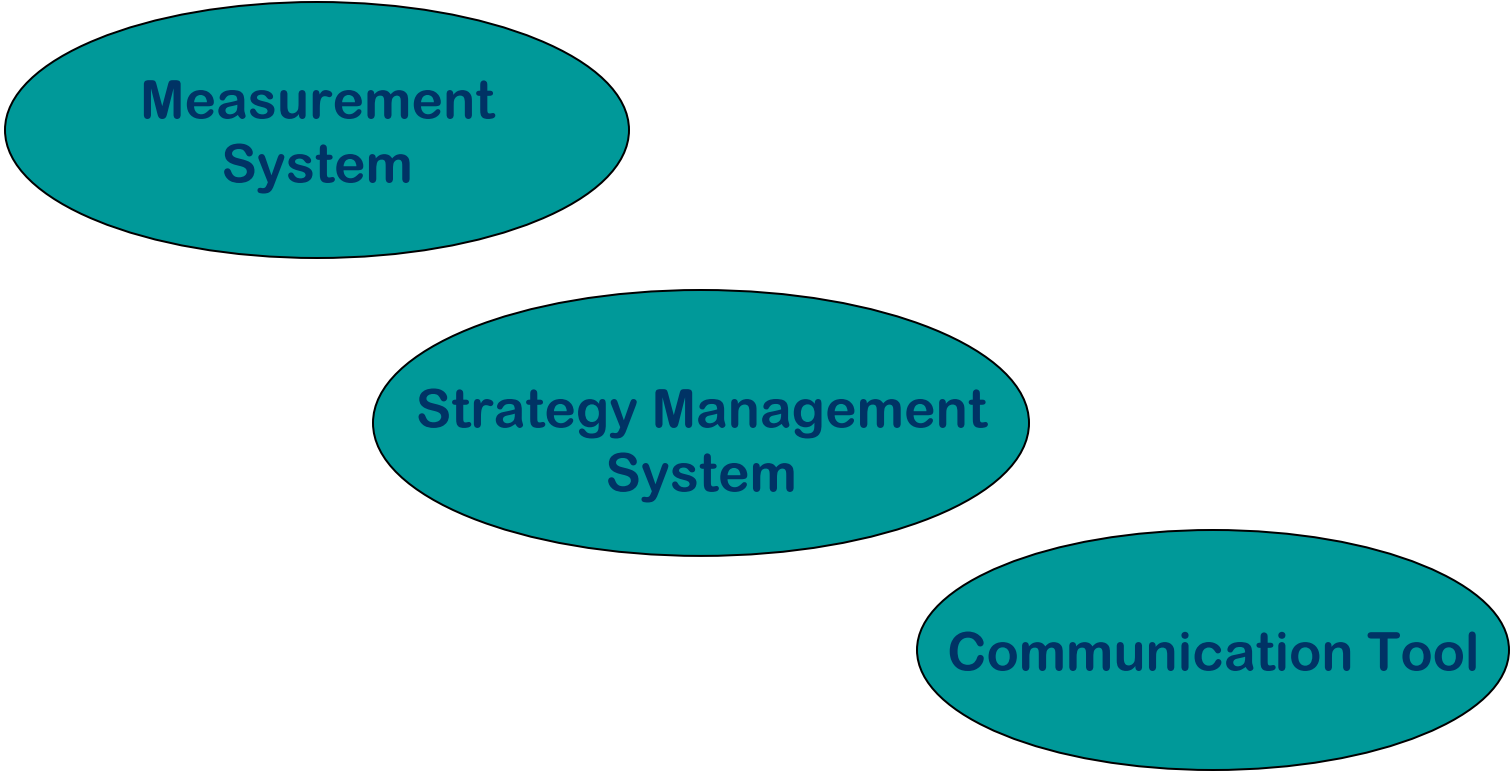
# Background

- **Project to facilitate NEPA process with others**
- **Emphasis in Scope of Work**
  - **Define processes**
  - **Determine points to enhance Management of Change**
  - **Identify ways to increase use of Geo Spatial Tools**
  - **Define innovative process to produce NEPA and other environmental plans**
  - **Evaluate alignment of Sustainability Goals and NEPA and EMS objectives**
  - **Identify Lead and Lag performance measures**
  - **Define linkages between environmental measures and Balanced Scorecard and Strategic Readiness System**
  - **Provide Training**
- **We'll start with the BSC and SRS**

# Balanced Scorecard

## What is it?

The Balanced Scorecard is a...



Measurement  
System

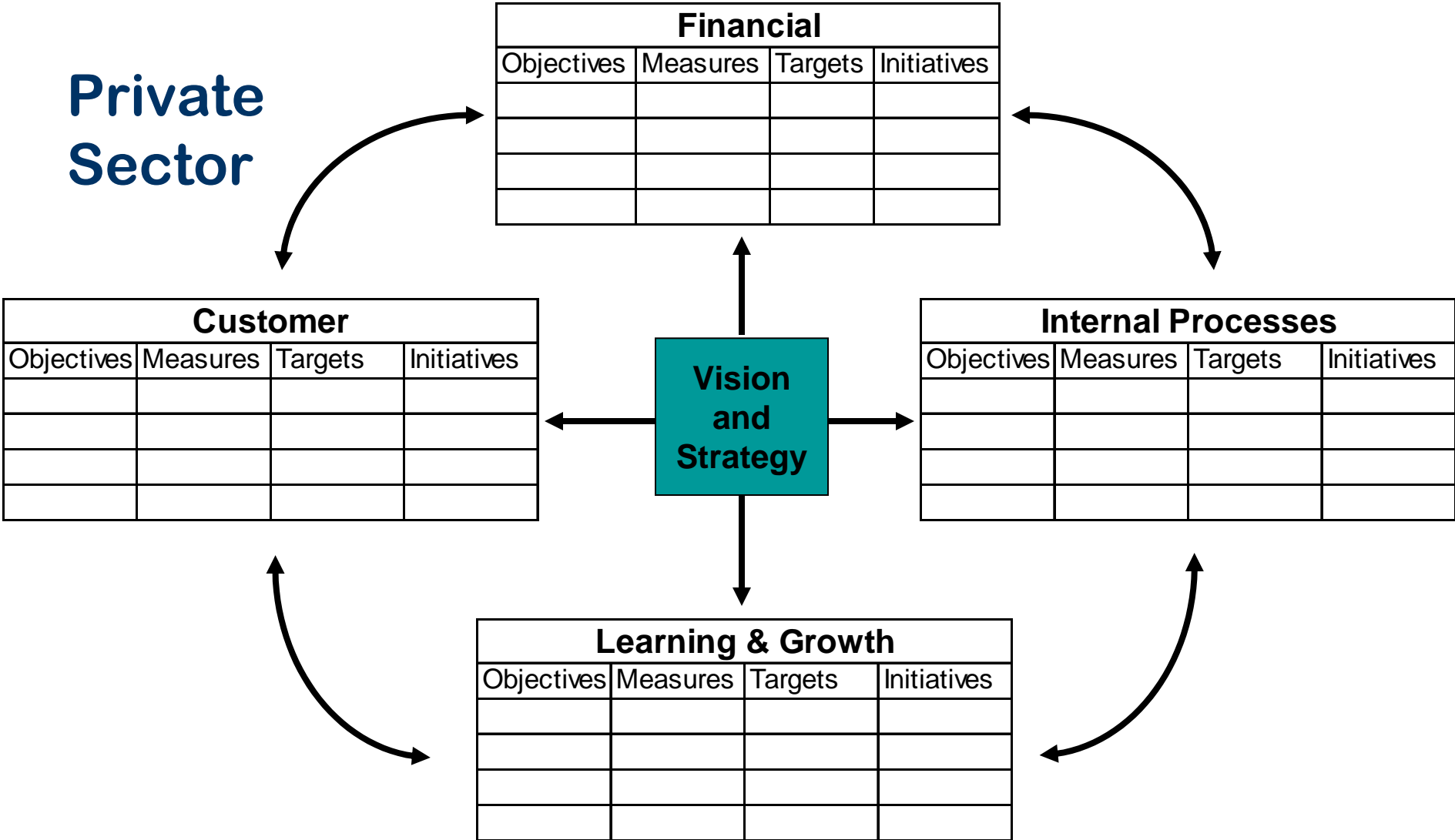
Strategy Management  
System

Communication Tool

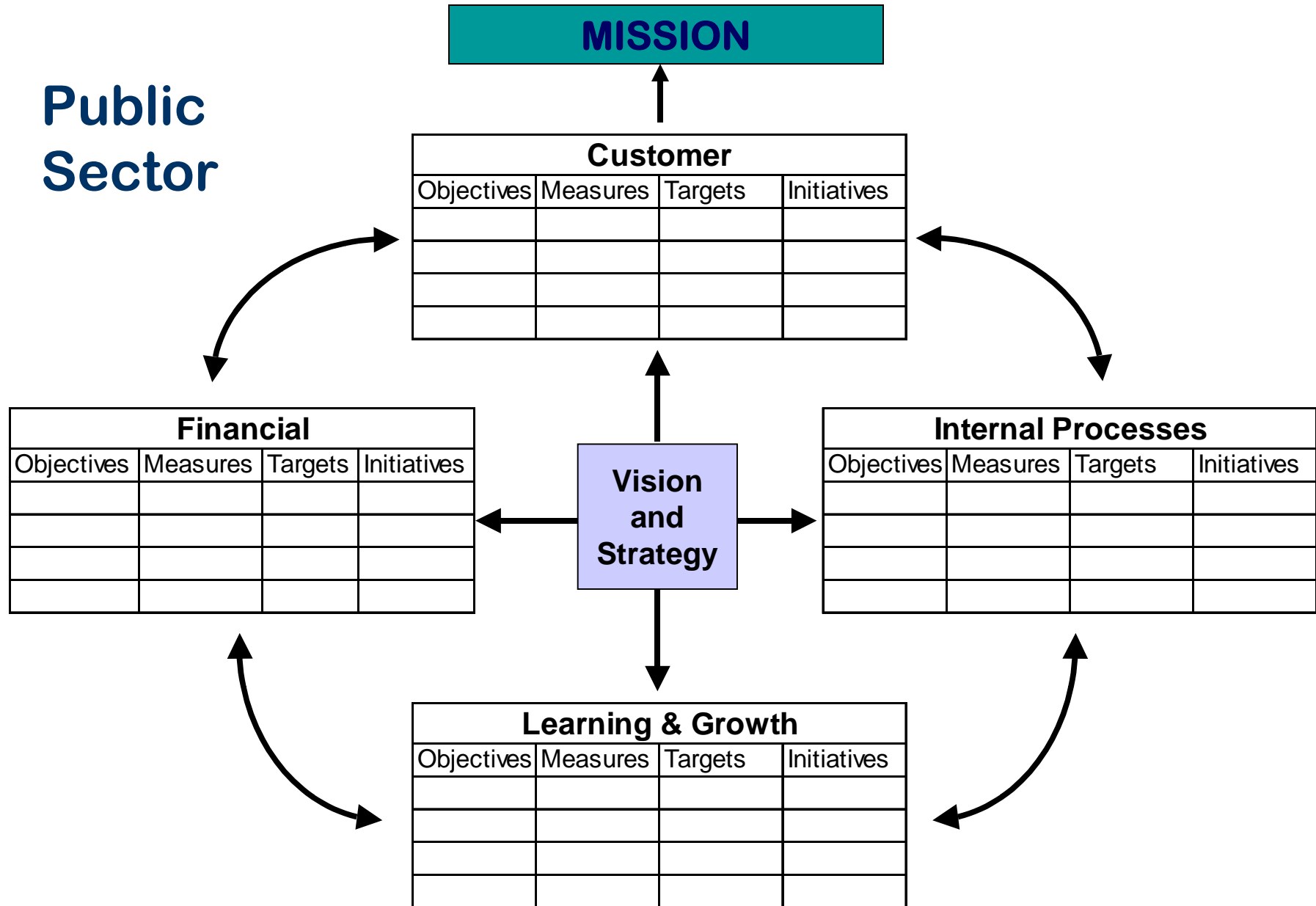
# BSC Key Concepts

- **Strategy Maps**
- **Strategic objectives and themes**
- **Cause – and - effect relationships**
- **Leading and Lagging indicators**
- **A cascading process**
- **Multiple (i.e., “balanced”) perspectives**

# Balanced Scorecard



# Balanced Scorecard



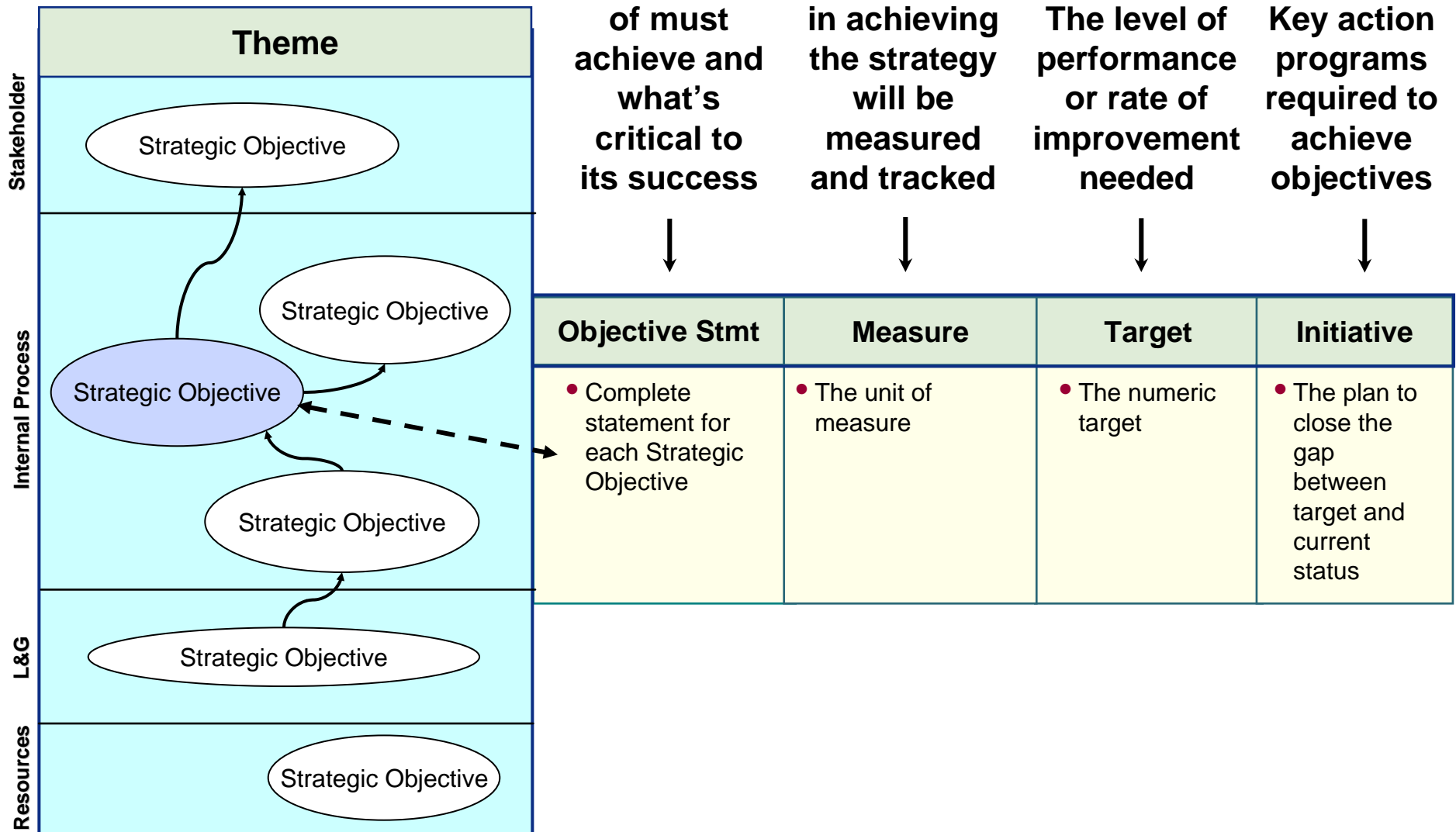


# BSC Perspectives



# Balanced Scorecard Components

Cause and effect relationships between strategic objectives



# Strategic Readiness System

1

**SENIOR  
LEADERSHIP**

*Align Senior Leadership  
Around the Strategy*

2

**TRANSLATE  
STRATEGY**

*Make the Strategy Understood &  
Actionable*

3

**ENTERPRISE  
ALIGNMENT**

*Align All Activities Throughout  
the Army in Support of the  
Mission*

**CONTINUAL PROCESS**

5

*Continually Monitor and  
Update Strategy*

4

**EVERYONE'S  
JOB**

*Equip Individuals to Fulfill  
Their Role in the Mission*



**STRATEGY -  
FOCUSED  
ORGANIZATION**

# Translating the Strategy

The Balanced Scorecard helps an organization translate strategy into action

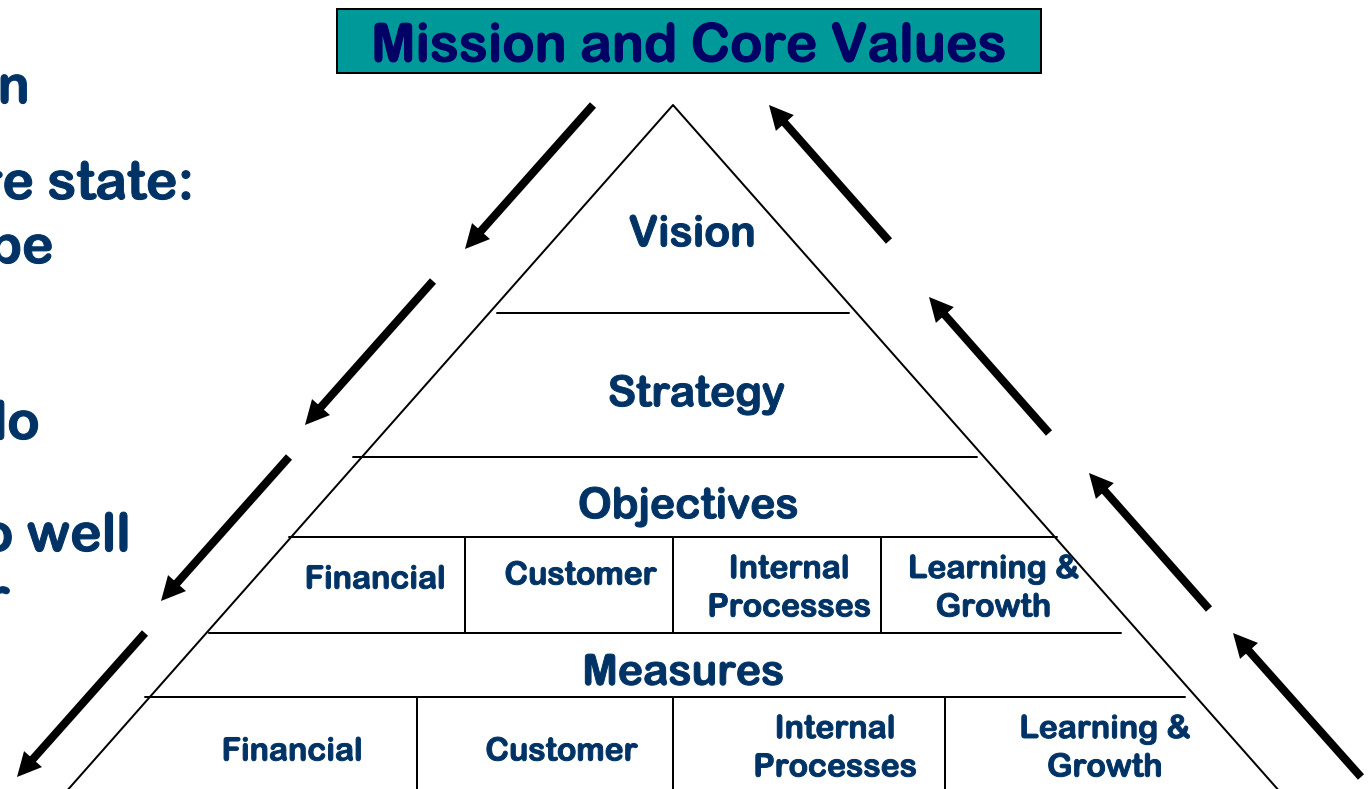
Why we exist and what we believe in

Our desired future state: what we want to be

Our game plan: what we plan to do

What we must do well to implement our strategy

How strategic success is measured and tracked



***“The Army’s purpose is to serve the American people, protect enduring national interests, and fulfill national military responsibilities.” -- FM1***

# Components of the Army Mission Map

**Mission**

**Stakeholder**

## Core Competencies

Shape Security Environment, Execute Prompt Response, Mobilize The Army, Conduct Forced Entry, Sustained Land Dominance, Support Civil Authorities--*APPG*

**Internal Process**

### Readiness

“We must maintain near term training and readiness to ensure that we are prepared at all times to fight and win our nation’s wars”

—*Joint Statement to Congress July 01*

### Trained & Ready Force for Today and the Future

### Transformation

“Transformation is the strategic transformation we will have to undergo to prepare ourselves now for the crises and wars of the 21st century.”

--*CSA, AUSA Oct 00*

### Sound Business Practices

“Enterprise systems enable seamless global operations. Therefore we will, proactively pursue reforms to implement proper business practices to improve operational effectiveness of The Army.”

– *Sec Army Confirmation Hearing May 01*

**Learning & Growth**

## People

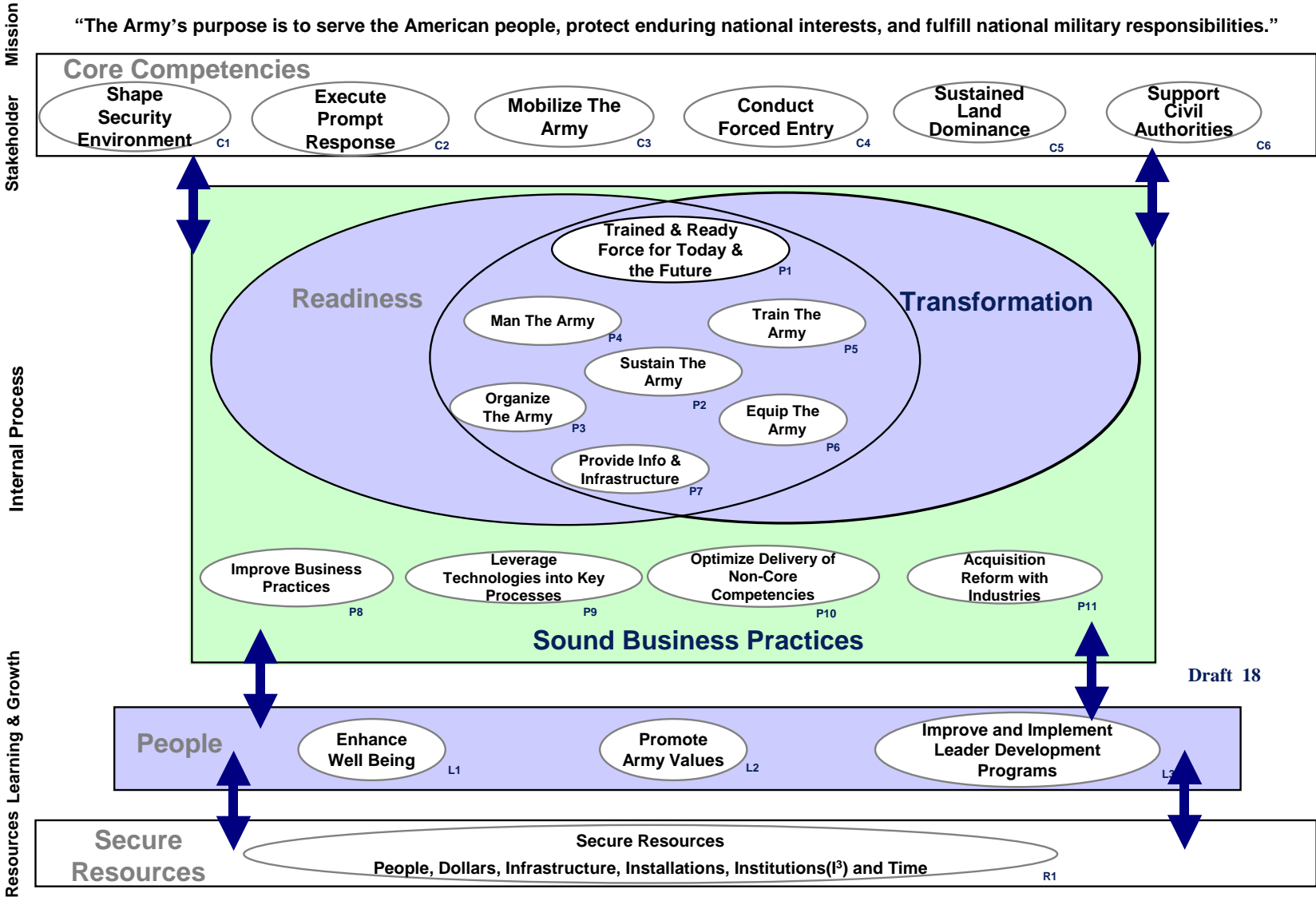
“People are the centerpiece of our formation.” –*CSA AUSA Oct 99*

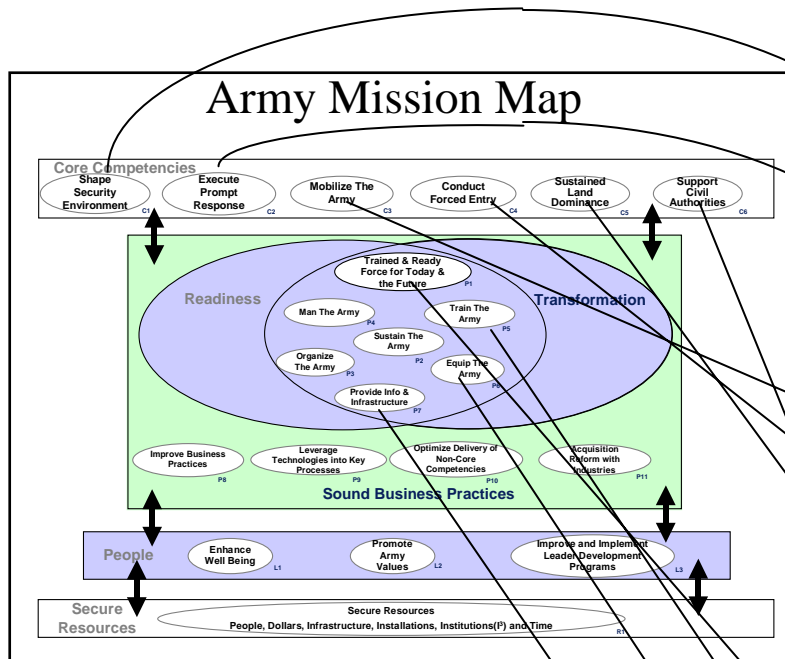
**Resources**

## Secure Resources

“Secure the resources including people, dollars, infrastructure, installations, institutions and time to utilize these resources”

# The Army Mission Map





Objective Statement	Measure	Target	Initiative
C1	MC1	TC1	Initiative 1
C2	MC2	TC2	Initiative 2
C3	MC3	TC3	Initiative 3
C4	MC4	TC4	Initiative 4
C5	MC5	TC5	Initiative 5
C6	MC6	TC6	Initiative 6
P1	MP1a MP1b	TP1a TP1b	Initiative 1a
P2	MP2a MP2b	TP2a TP2b	Initiative 2b
P3	MP3a MP3b	TP3a TP3b	Initiative 3b
P4	MP4a MP4b	TP4a TP4b	Initiative 4a

**For each and every Bubble / Strategic Objective there is:**

- An Objective Statement
- A Measure
- A Target
- An Initiative - if there is a gap between the Target and current status

# What About Sustainability?

- Sustainability is about long-term success at developing a desired future state
- It is the ability to function or operate into the future without decline...
- Example: Health is essentially dying at the slowest possible rate
- Sustainability and health implies quality of life
- Key concern is exhausting or overloading resources and ecosystems needed to survive
- It requires strategic planning, measurement, monitoring and improvement



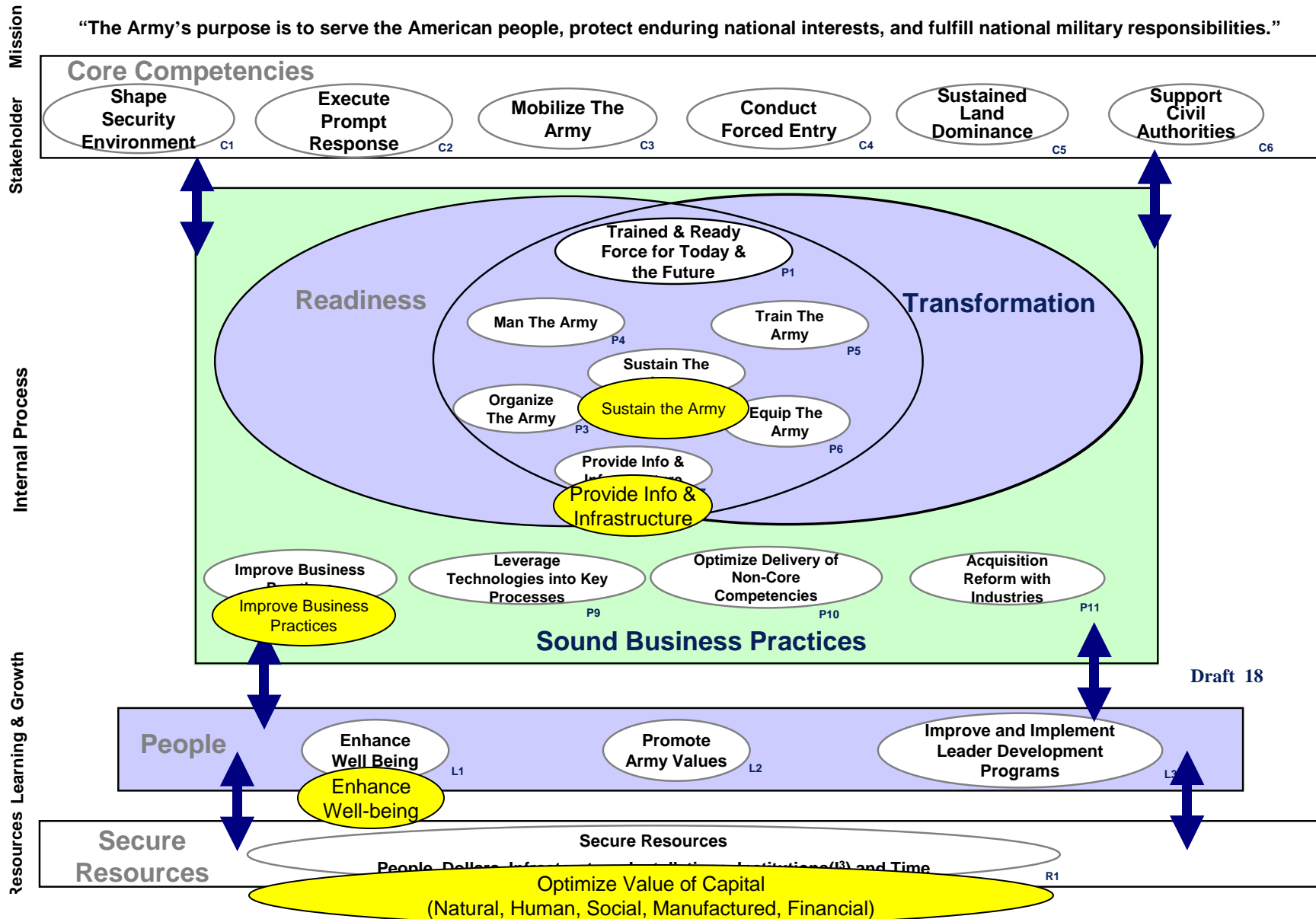
# Sustainability and BSC

Sustainability can be integrated...

- **Within existing perspectives**
- **As an additional perspective**
- **As a strategic “theme”**
- **As a separate scorecard**

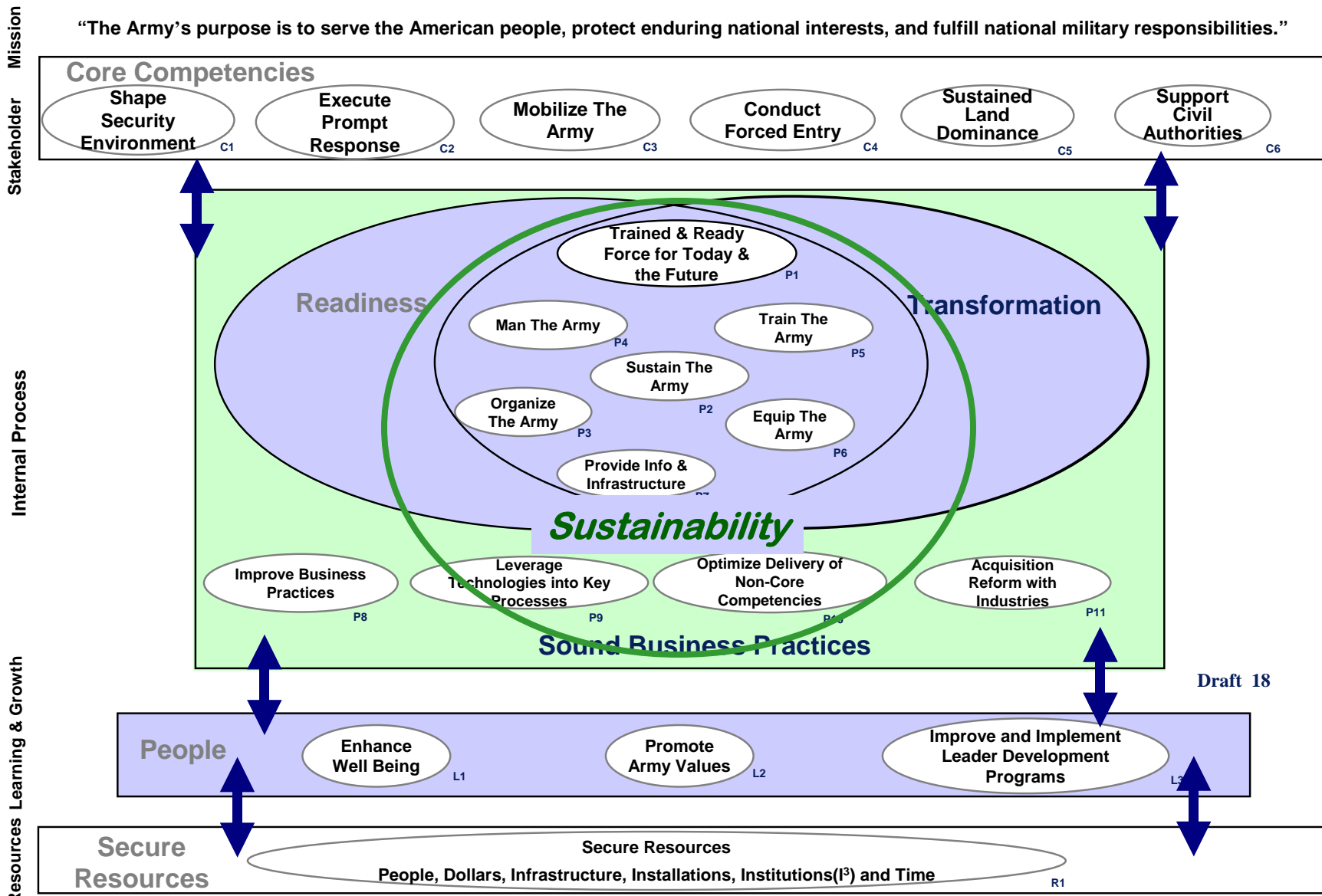
# “Embedded” Sustainability

“The Army’s purpose is to serve the American people, protect enduring national interests, and fulfill national military responsibilities.”

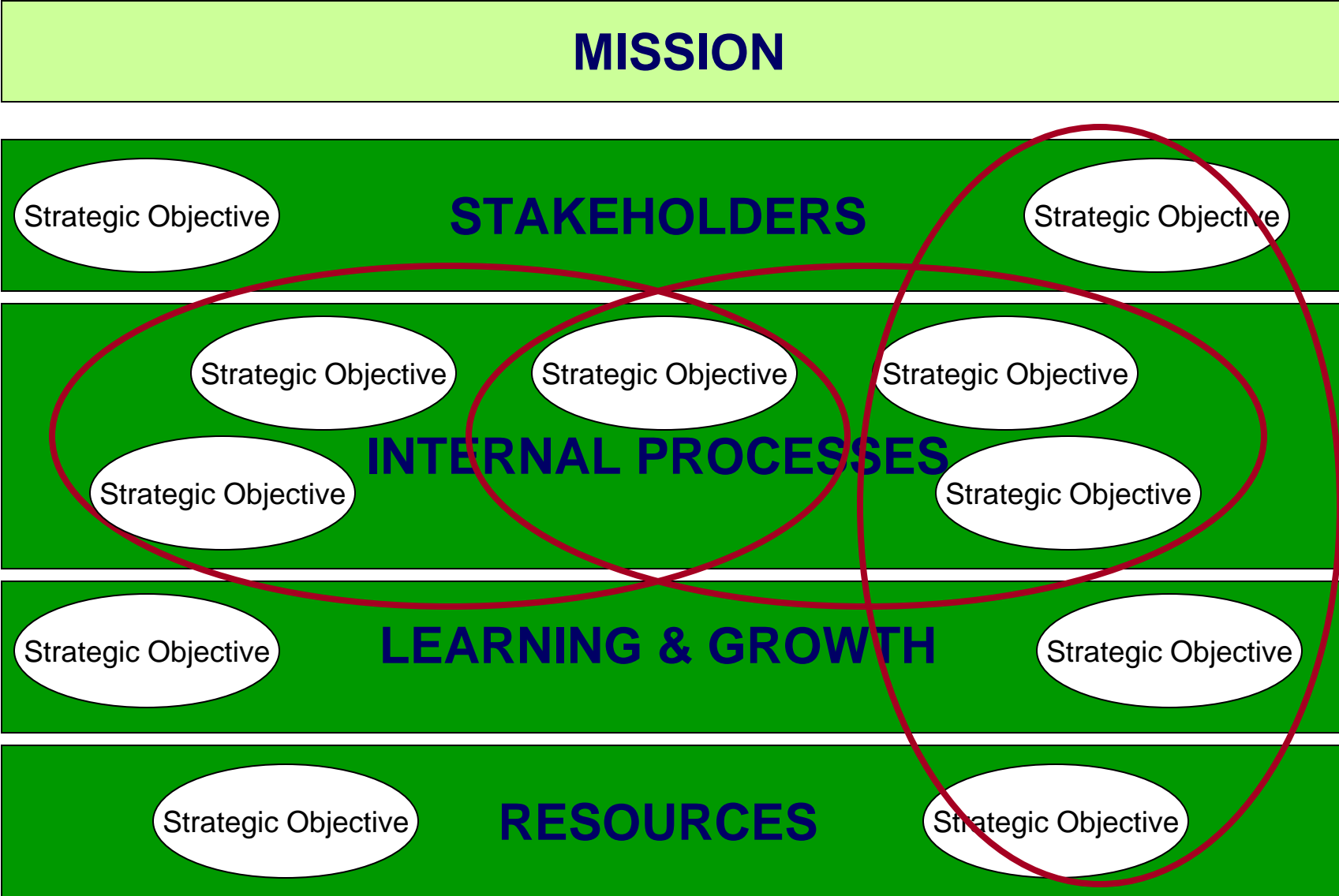


# Sustainability as Strategic Theme

“The Army’s purpose is to serve the American people, protect enduring national interests, and fulfill national military responsibilities.”



# Strategic Themes



# Integration and Alignment

- **The most critical factor**
- **Key components at Fort Lewis**
  - **Sustainability Goals and Initiatives**
  - **NEPA Approved Actions**
  - **Management Plans**
  - **EMS Planning and Management of Change**
  - **Management Review**
- **Increases resource efficiency and effectiveness**
- **Improves control, decreases risks**
- **Initially more complicated than it looks**
- **More important than you may think**



# **BSC/SRS Style Alignment and Integration**

- Caused thinking about alignment and integration of:**
  - Environmental programs**
  - Environmental projects**
  - Environmental Management Plans**
  - NEPA process**
  - EMS Planning**
  - Sustainability Goals**
  - Multiple objectives**
  - Multiple measures**
- Resulted in development of the Legacy Project**

# Fort Lewis Legacy Project Concept

- Design innovative process for facilitating NEPA
- Focus on integration and alignment
- Identify linkages among
  - NEPA
  - Geo-Spatial Tools
  - EMS
  - Environmental objectives
  - Management Plans
  - Sustainability Goals
- Specific to Fort Lewis but possible model for other DOD locations



# Key Issues and Questions

- What was in-place to build on without “reinventing the wheel”?
- How did and could key process components link or integrate?
- How could Environmental Management Plans be more useful and effective?
- How could we improve success of EMS deployment?
- Where could Geo-Spatial tools help management succeed?
- How to facilitate NEPA and link to EMS and Sustainability?





# Fort Lewis Model Integrated Process

- **Integrate and align:**
  - Mission and business goals
  - Sustainability goals
  - Environmental objectives
- **Increase participation by:**
  - EMS Management Reps
  - Subject Matter Experts
  - Sustainability Teams
  - Program Managers
  - Business Process Personnel
  - Other Interested Parties
- **Possible Future State:**
  - Sustainability Management System, or perhaps:
  - Integrated Sustained-Asset Management System



# New Opportunities for Geo-Spatial Tools

- ▶ **Developing Sustainability Goals and Initiatives**
- ▶ **Visualizing vulnerabilities and establishing Priorities**
- ▶ **Identifying and evaluating NEPA Alternatives**
- ▶ **Improving use of Environmental Management Plans**
- ▶ **Communicating impacts to internal and external stakeholders during reviews of proposed actions**



# **New Opportunities for Geo-Spatial Tools**

- ▶ Help Teams visualize, understand and compare alternatives and objectives**
- ▶ Support EMS planning to identify and rate impacts**
- ▶ Improve EMS Awareness and Job-Specific Training and competence**
- ▶ Model the effectiveness of operational controls**
- ▶ Support Proponent implementation of approved projects or proposals**
- ▶ Facilitate Management Review and improve decision-making**

# Key Concepts of Model Process

- Clear linkages from Mission through Sustainability, EMS, NEPA and Management Plans
- NEPA part of EMS *Management of Change* Process
- Alignment and integration of Sustainability goals, EMS Objectives and Management Plans
- Program Managers formally reviewing Sustainability Goals, EMS objectives and Management Plan objectives
- Increased transparency and public participation
- Deconfliction as formal process with wide participation of subject matter experts and stakeholders

# Cornerstone Process: Deconfliction

- Initially meetings to provide awareness of proposals
- Successfully achieved broad participation across Fort Lewis organization
- Provides awareness and understanding at all levels
- Can promote strengthening of NEPA, EMS, Sustainability and Management Plans
- Key to new model and culture for integration and alignment across organization



# Environmental Management Plans

- More closely integrating Plans with Sustainability, EMS and NEPA
- Construct plans in EMS element format
- Conforms to system structure of Plan, Do, Check, Act
- Describing what, how, who and when
- Promotes alignment
- More auditable
- Inputs to Deconfliction

# Key EMS Plan-Structure Format

- **Planning and Priorities**
- **Objectives and Targets**
- **Competency, Training and Awareness**
- **Monitoring and Measurement**
- **Preventive and Corrective Action**
- **Management Review**



# Performance Measures

- **Developed for Sustainability Goals**
- **Indicators**
- **Measures**
- **Lead**
- **Lag**
- **Same can be done for Management Plans**



# Implications for Operations of BSC Approach

- Improved alignment of objectives, measures and actions
- Greater transparency of linkage between mission and operating activities
- Greater transparency to stakeholders and other interested parties
- Clearer lines of responsibility from Mission to operating activities

# Implications for Operations

- **More accountability at all levels**
- **Improved data collection**
- **Improved decision-making**
- **Improved application of resources**
- **More accurate and effective  
measurement**

# Opportunities from Legacy Project

- **Implementing the Model integrated process can improve overall environmental management performance**
- **Using the Management Plans in EMS format can drive increased use of Geo Spatial Tools**
- **More effective use of GST can be a means to improve measurement and data use**

# Legacy Project Opportunities

- Improving measurement means defining performance expectations
- Clearly defined performance expectations can drive establishment of an effective and efficient Measurement Process
- Executing more effective and efficient Measurement can drive improved performance

# Summary

- **Background**
- **SRS and BSC**
- **Legacy Project and NEPA**
- **Deconfliction, Sustainability and EMS**
- **Management Plans**
- **Implications for Operations**
- **Legacy Project-Related Opportunities**