

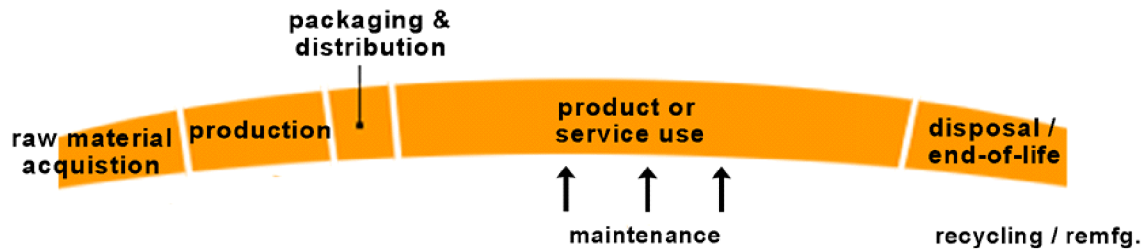
Section 1

**Lawrenceville School**  
**Environmentally Responsible Purchasing Implementation Proposal**  
*Utilizing the Procurement Process to Integrate Environmentally Responsible Criteria at  
The Lawrenceville School*

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**INTRODUCTION/ERP OVERVIEW**

Environmentally Responsible Procurement (ERP) refers to the procurement of products and services that have a lesser or reduced effect on human health and the environment when compared with competing products or services that serve the same purpose. This comparison may consider raw materials acquisition, production, manufacturing, packaging, distribution, reuse, operation, maintenance or disposal of the product or service (Figure 1).



**Figure 1. Life-cycle model for products and services**

In addition to improved environmental performance, many environmentally preferable products work as well or better than traditional products and can even save money. Switching to safer cleaning products, for example, can reduce incidents of allergic reactions, asthma, burns, eye damage, major organ damage, and cancer connected with the hazardous chemicals used in many traditional cleaning products. Buying 100 percent recycled-content paper can reduce energy use by 44 percent, decrease greenhouse gas emissions by 37 percent, cut solid waste emissions in half, decrease water use by 50 percent, and practically eliminate wood use. Similarly, energy-efficient vehicles and renewable energy cut greenhouse gas emissions and harmful air pollutants while lessening our dependence on imported oil. Overall, the implementation of ERP constitutes a system-wide process reforms that collectively contributes to an organizations' reduction in ecological footprint (cumulative associated ownership to global ecological damage stemming from a demand for natural resource to sustain economic and social balance).

Environmentally Responsible Purchasing can allow and organization to offset financial and environmental risk, rather than inheriting it from your suppliers. Alternatively, you may want to involve your suppliers at the design stage or develop a network to pre-qualify suppliers that have responsible environmental management. Assessments and benchmarking can aid an organization with the process. ERP can bring important benefits for its practitioners: risk management, eco-efficiency, stronger supplier relationships, and improvements in environmental performance, just as a start.

As one of the most prominent private schools in the nation, The Lawrenceville School has an opportunity to set the example and standard for institutionalizing environmentally responsible purchasing and environmental performance standards through its purchasing and waste management process (upstream-through-downstream). With its long history of academic leadership we believe The Lawrenceville School has massive ERP implementation opportunities. In short, if the faculty, students, staff, alumni and parents are made aware of the various economic (including economic development opportunities as well as cost savings) and associated environmental impacts within the purchasing/supply chain lifeline, contract designs and procurement decisions could be enhanced to augment environmental compliance and deliver environmental merits based on the “distributed” reduced impact and solid waste and improved operating efficiencies.

## **PROGRAM GOALS AND OBJECTIVES**

The overall goal of this project section is to implement and sustain ERP at The Lawrenceville School via the procurement process (with a full understanding of how the procurement process integrates with the waste management process). This will be accomplished through an understanding and the integration of sustainability/environmentally responsible, energy and waste management issues and criteria into contract and bid specification development and procurement decision making process. Integrating sustainability would be seen as complementary to cost, schedule and function. Specific goals and objectives are as follows:

### **Goal #1 (Project Task #1)**

Conduct a Campus-wide procurement assessment. Dr. Lyons will conduct an assessment of all available purchasing records for The Lawrenceville School’s purchases for the period 2001 – Present.

#### **Objective**

- Use the assessment to determine the overall procurement process of The Lawrenceville School and to:
  - Recommend a centralized purchasing implementation strategy;
  - Design a Procure-to-Waste model for collaborating with the Waste Management assessment team;
  - Provide The Lawrenceville School Community and the ERP Implementation Team with benchmark data;
  - Identify commodities and/or services which could be targeted for immediate/phase-in ERP conversion.

### **Goal #2 (Project Task #2)**

Identify key administrative/purchasing decision-makers and then schedule and conduct on-going ERP training, which will include:

- Identifying key personnel that oversee material control, procurement, finance and contracts;
- Identifying key personnel with Procurement authority and officials that manage the contract negotiations, bidding and accounting process;
- Identifying key personnel that oversee operations, legal, environmental compliance and health/safety issues.

### **Objectives**

- Dr. Lyons will provide on-going ‘In-house’ training and support in order to help The Lawrenceville School understand sustainability issues as they pertain to contract management.
  - The training would aim to build environmental performance-based criteria and existing innovation/technology into contracts to deliver sustainability outcomes. Training will provide the skills necessary for integrating sustainability measures into contract language and specifications at the user level. Integrating sustainability would be seen as complementary to cost, schedule and function.
  - Training would involve the development of ERP guidelines. The guidelines would serve to walk The Lawrenceville School officials responsible for procurement transactions through the contract language and specification greening process by identifying all the fundamental questions pertaining to the environmental impact stemming from the procurement transaction being considered. The guidelines will help these officials/administrative/faculty members identify alternatives that are environmentally responsible. The Lawrenceville School Administrators will also provide key insights and feedback using their experience (Dr. Lyons will conduct regular program evaluations).
  - The Lawrenceville School administrators will gain an understanding of how contract language can address life cycle impacts by looking at the following environmental sustainability and pollution prevention issues:
    - Energy efficiency and conservation,
    - Natural resource depletion
    - Forest and ecosystem protection
    - Water efficiency
    - Waste minimization
    - Hazardous waste reduction
    - Toxic material content
    - Adverse effects to workers, animals, plants, air, water and soil
    - Recyclable content
    - Recyclability of waste resources
    - Resource conservation
    - Renewable material percentages
    - Green house gas emissions

- Packaging
  - Transportation
  - Others
- The training program will strive to be continuous within the Lawrenceville School community with continuing education opportunities.
  - Administrators and Faculty attending training should qualify for CEU credits.

### **Goal #3 (Project Task #3)**

- Assist in the development of standard, environmentally responsible performance-based criteria (including all available ERP innovations and technology developed at Rutgers) which can be incorporated into all Lawrenceville School specifications and contracts.

#### **Objective**

- Dr. Lyons will provide training and tools necessary for integrating sustainability measures into contract language and specifications at the users'/requesters' level. Contract language would serve to address life cycle impacts by looking at the following environmental sustainability and pollution prevention issues:
  - Hazardous waste reduction and elimination
  - Toxic material content reduction and elimination
  - Adverse effects to workers, animals, plants, air, water and soil
  - Energy efficiency and conservation
  - Green house gas emissions reduction
  - Natural resource conservation
  - Forest and ecosystem protection
  - Water efficiency, conservation and protection
  - Waste minimization and resource conservation
  - Recyclable content and recyclability
  - Renewable material percentages
  - Packaging
  - Transportation
  - Others

### **Goal #4 (Project Task #4)**

- Develop plan for centralizing all procurement activity. During the nine months of this ERP Implementation Project, Dr. Lyons will assess the current procurement process and recommend competitively bidding and awarding several centralized web-based contracts (which contain ERP products and services) for use by the Lawrenceville Community (e.g. office supplies, paper and paper goods, custodial supplies, food).

#### **Objectives**

- Dr. Lyons will conduct campus-wide assessment of the procurement transactions conducted by The Lawrenceville School. This assessment will be used to identify

procurement trends and opportunities for consolidating its purchases and targeting its procurement power towards contracted suppliers in an effort to reduce overall procurement costs and expand ERP opportunities.

- Develop and institute a centralized purchasing guideline to walk The Lawrenceville School administrative and finance professionals through the procurement process. Dr. Lyons/IT-web Developer Team member will design a web portal that will provide centralized purchasing guidelines, contracts and a link to supplier web sites which will provide the goods and services needed by The Lawrenceville School Community. The guidelines/web site will also help the administrative and finance professionals identify alternatives that are environmentally responsible.

#### **Goal #5 (Project Task #5)**

Assist in the development of The Lawrenceville School ERP Policy.

##### **Objectives**

The development of an ERP policy will be used to sustain and support the overall ERP implementation program. Dr. Lyons has developed several ERP policy models and these will be presented to The Lawrenceville School community for evaluation and consideration.

#### **Goal #6 (Project Task #6)**

- Sustain ERP well beyond the implementation period. Submit Final Project Report

##### **Objective**

- Throughout the period of this nine month project, Dr. Lyons will develop an master ERP Guideline which will provide The Lawrenceville School administrative and finance professionals with all the information used to develop this program. This will include, but is not limited to, all assessment data, training materials, ERP contract language and specifications. The ERP Guideline will help the administrative and finance professionals modify the program where necessary. Additionally, we envision The Lawrenceville School becoming the regional expert at implementing ERP programs and should use this knowledge to host future workshops and conferences; the revenue from these events can be used to invest in the School's ERP Program.
- Since all documents and training materials will be turned over to The Lawrenceville School, we believe the institution can provide their own on-going ERP training for its community.
- Develop/submit a final end-of-project report.

## **METHODS AND PROCEDURES (METHODOLOGY)**

Dr. Kevin Lyons will:

- Embed himself into The Lawrenceville School community while conducting this nine (9) month applied ERP implementation/research assignment. Therefore, The Lawrenceville School Community can expect Dr. Lyons to work side-by-side with them through this ERP implementation process.
- Bring the ‘total’ research capacity that Rutgers University has to offer to in this area to The Lawrenceville School organization.
- Where appropriate, become an agenda item on standard/various The Lawrenceville School departmental meetings to discuss the ERP project and report on the progress of the project. Dr. Lyons will also meet with students, parents, alumni, and board members (at the Administrations request) in order to provide supplemental ERP workshops, field trips, etc. in order to assist the entire Lawrenceville School community in understanding the value of implementing and sustaining this ERP program.
- Conduct assessment/Benchmark/Gap Analysis of current ‘Procure-to-Pay-to-Waste’ process at The Lawrenceville School.
- Conduct comprehensive assessment of the procurement process as it exist within The Lawrenceville School.

This assessment will include how:

- product or service requests are initiated at the user department level
- specification for product or service are developed and the criteria they follow
- user requests are transmitted to the Procurement department/supplier
- bid packages prepared for bidding
- qualifications hearing are conducted (procurement and user department)
- bid selections are awarded (i.e., low cost over quality and total life cycle cost)
- services are conducted beyond contract award.
- Benchmark existing practices and compare practices each month; will report on ERP participation and will publish environmental performance impacts including air, energy, fuel consumption reductions.
- Develop a secure website (or intra-school file) for The Lawrenceville School ERP contracts for centralized procurement transactions; Dr. Lyons will work with the School Administrators to assist in negotiating centralized contracts for use by the entire School Community (virtual centralized purchasing concept).
- Design and implement a user-friendly web-based ERP-Decision-maker’s computer module for the entire The Lawrenceville School team (this will be one of our training tools). This computer system will allow personnel to identify the ERP opportunities and

identify the environmental/economic impacts as the contract is being designed, evaluated (prior to award) and will allow for environmental performance measures to be conducted.

- As part of this project, we will design a web site which will contain ERP resources, information and a comprehensive database dedicated to providing ERP product specifications performance data as well as providing cost benefit analysis/life cycle assessment-costing tools. Currently, there are tools available for assisting purchasing professionals in identifying ERP products and services, however, these tools are spread out over hundreds of web sites or can only be found if you contact the appropriate Federal or State Agency for hardcopies of reports. Research which has integrated governmental and private sector ERP data has already conducted at Rutgers University by Dr. Lyons will be incorporated into one website for The Lawrenceville School /Rutgers University (Dr. Lyons has Oracle Financials/Enterprise Resource Planning Certification and will use the tools used to obtain this certification to apply to this project). During the assessment/benchmarking phase of this project, Dr. Lyons will determine how data from The Lawrenceville School purchases will be incorporated into this website (e.g. cost data, sourcing data, product information, vendor information (for GIS tracking purposes), packaging information, MSDS data, product LCA/Cost Benefit Analysis data, etc.). This data will be important for determining the true environmental, social, and economic impact The Lawrenceville School's purchasing decisions have on standard as well as ERP products and services procurements. Note: if time permits, this website could be modified into portal for secondary school systems and other relevant sectors to submit their 'best practice' ERP information and data so The Lawrenceville School can consistently have the latest and best ERP information available. All of the information and data collected in this web environment could be used to produce quarterly and/or annual reports on the effectiveness of this ERP initiative beyond the funded period.
- Work with various New Jersey-based Higher Education institutions and school systems so that The Lawrenceville School has a steady stream of local research and outreach partnership opportunities.

**During the Course of this ERP Implementation project The Lawrenceville School will be asked to:**

- Hand-select key decision-makers that will be assigned to assist Dr. Lyons in his information gathering and research/working assignment.
- Provide Dr. Lyons with a tentative nine month schedule (January – September) for key faculty, staff and students to attend training and other ERP implementation programs. Our preliminary investigation shows that during the Spring 2005 academic session, Wednesday afternoons could be used to schedule on-campus meetings, and training sessions.

## **EXPECTED OUTCOMES (FROM TRAINING AND THE ENTIRE ERP PROJECT):**

### Local

- Reduction in the total risk posed to public health and the environment (cumulative effect) resulting from reduced waste, pollution and environmental and health risks associated with procurement activities.
- Reduced point and non-point source environmental impacts.
- Overall efficiencies in transit operations resulting from reduced waste, pollution and risks associated with procurement activities.
  - Reduced environmental impacts; hazards
  - Reduced health risks to operational worker
  - Efficiencies create energy reductions (green building design and construction, alternative fuels), reduced energy demands
  - Waste prevention strategies (upstream elimination of waste impacts will reduce downstream waste impacts and reduce waste management cost)
- Reduced liabilities.
  - Potential to reduce The Lawrenceville School insurance rates (workers compensation, liability, etc.)
- ERP trained Lawrenceville School Administrators and Faculty capable to sustain the ERP program.
- Marketing 'green' strategies to your faculty, staff, students and parents (including potential students) increases confidence and public image/profile.

### Regional

- Advancement of professional procurement education and how professional procurement in schools should be conducted statewide.
- Create multiple Lawrenceville School/higher education ERP partnerships.
- Develops markets for green products and services.
- Develop local markets for 'green' products and services (local economic development).
  - Locally developed markets develop promotes and sustains local economic development
- Generate measurable pollution prevention data beneficial to the State.
- Deliver overall improvements in environmental quality to The Lawrenceville School, the surrounding Lawrenceville community and New Jersey through ERP.

## Global

- Total reduction in entities ecological footprint stemming from global procurement transactions.
- Worldwide leadership in sustainable procurement and transport – The Lawrenceville School ability to train other transit professional’s and create revenue generated initiatives in the process (conferences, workshops, research sponsorship)

## **WORK PLAN**

Refer to Appendix A for cost proposal summary for each task.

### **Task #1**

- Conduct ERP Assessment

### **Task #2**

- Deliver ERP Training (train-the-trainer) and develop the continuous ERP education plan

### **Task #3**

- Develop ERP Contract Specifications and Standards
- Develop ERP Computer System/ERP Web-Database

### **Task #4**

- Develop plan for centralizing all procurement activity.

### **Task #5**

- Develop ERP Procedures, Policy and Guidelines.

### **Task #6**

- Develop a plan for sustaining ERP well beyond the implementation period.
- Develop End-of-Project ERP report

*Note: A master project plan will be maintained by K. Lyons using MS Projects. This document will be brought to each ERP meeting update.*