

Market Progress Evaluation Report

Lighting Design Lab

prepared by

Energy Market Innovations, Inc.

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LIGHTING DESIGN LAB

MARKET PROGRESS EVALUATION REPORT

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CONTENTS

EXECUTIVE SUMMARY	I
Recent Scope of Lab Activities.....	i
Methodology.....	ii
Recommendations.....	ii
Recommendations on the Lab's Outreach Strategy	ii
Recommendations on the Lab's Operations	ii
1. INTRODUCTION.....	1
1.1 Evaluation Overview	2
Objectives	2
Methodology.....	2
2. PROJECT HISTORY UPDATE	4
2.1 Overview of Recent Lab Developments	4
Increased Emphasis on Regional Outreach	5
Formation of Regional Technical Advisory Committees (TACs)	5
Increased Use of the "First Visit's On Us" Program.....	6
Staffing Changes and Augmentation	6
Updating of Exhibit Space in Seattle.....	6
Renewed Emphasis on Daylighting.....	7
Use of Outside Instructors.....	7
Acquisition of northwestlighting.com Website	7
Changes in Organizational Structure	8
2.2 Summary of LDL Activity.....	8
Data Tracking at the LDL.....	8
Summary of Recent Lab Activity.....	9
Summary of Off-Site Activity.....	11
Trends in First-time Visitors.....	12

2.3 Regional Outreach Development	14
TAC Development	14
Training and Education.....	15
Mailing List Development	17
3. NORTHWESTLIGHTING.COM.....	18
3.1 Site and Content Development.....	18
3.2 Usage Statistics and Trends	19
An Increasing Number of Visitors	19
Top Destinations Among Visitors.....	20
Top Categories of Information Accessed by Visitors.....	21
Need for an In-Depth Understanding of Visitor Navigation.....	22
4. SUMMARY AND RECOMMENDATIONS.....	24
4.1 Progress Toward Goals in 1999	25
4.2 Recommendations	27
Recommendations on the Lab's Outreach Strategy	27
Recommendations on the Lab's Operations.....	28

EXECUTIVE SUMMARY

This report summarizes the findings from an interim market progress evaluation of the Lighting Design Lab (LDL, Lab) undertaken for the Northwest Energy Efficiency Alliance (Alliance). The LDL in Seattle provides educational programs, technology displays, consultations, and facility-based evaluation tools to lighting professionals who make or influence decisions with respect to residential, commercial, and industrial buildings -- architects, lighting designers, interior designers, electrical engineers, building owners, facility managers, and facility engineers. Founded in 1989, the goal of the Lab is to provide information, training, and demonstration of state-of-the-art lighting design and products in order to promote energy efficiency in buildings. Lab staff conduct workshops and provide lighting consultations to professionals on-site and at remote locations. There are product demonstrations, information and displays, a daylighting laboratory, and a 1,200 square foot mock-up area at the Lab facility in Seattle.

Recent Scope of Lab Activities

The Lab is operated by Seattle City Light (SCL) with major funding provided by the Northwest Energy Efficiency Alliance. The Alliance considers the LDL to be an "infrastructure" project in its regional market transformation efforts. Infrastructure projects are included within the Alliance's portfolio of projects as a means of providing information within a market, including both (1) information development and (2) information dissemination¹.

During the period covered by this evaluation (1999 and through April, 2000), there were several significant developments at the Lighting Design Lab:

- Increased emphasis on regional outreach
- Formation of regional Technical Advisory Committees (TACs)
- Increased use of the "First Visit's On Us" Program
- Staffing changes and augmentation
- Updating of exhibit space in LDL facility
- Renewed emphasis on daylighting
- Use of outside instructors
- Acquisition of northwestlighting.com website

¹ See "Guidance on Market Transformation Infrastructure Investments." Draft paper prepared by the Northwest Energy Efficiency Alliance, October 20, 1997.

- **Changes in organizational structure**

During this period, the Alliance was especially interested in having significantly greater emphasis placed on regional outreach outside the Puget Sound Region. A review of LDL activities indicates that substantial progress has been made toward this objective. Class offerings outside the Puget Sound region have increased.

Methodology

Research conducted for this report included interviews with the LDL Project Manager, the Alliance Project Manager, LDL staff, three LDL Steering Committee members, and ten Technical Advisory Committee members. Lab documents, reports, and statistics were reviewed in detail.

Recommendations

Recommendations on the Lab's Outreach Strategy

Based upon our review of the Lab's outreach strategy, we offer several specific recommendations, including:

- **Expand technical assistance component of the Lab's outreach**
- **Include more proactive outreach with classes and technical assistance**
- **Focus TAC on members who can provide strategic input**
- **Facilitate informal roundtable lunches**

Recommendations on the Lab's Operations

This evaluation effort was not intended to focus on day-to-day Lab operations; nevertheless, the following recommendations should be considered based upon our observations to date.

- **Explore options for electronic contact management systems**
- **Expand class and service evaluation forms**
- **Modify status report format to include analysis of trends**
- **Monitor website user navigation trends and needs**

1. INTRODUCTION

This report summarizes the findings from an interim market progress evaluation of the Lighting Design Lab (LDL, Lab) undertaken for the Northwest Energy Efficiency Alliance (Alliance). The LDL in Seattle provides educational programs, technology displays, consultations, and facility-based evaluation tools to lighting professionals who make or influence decisions with respect to residential, commercial, and industrial buildings -- architects, lighting designers, interior designers, electrical engineers, building owners, facility managers, and facility engineers. Founded in 1989, the goal of the Lab is to provide information, training, and demonstration of state-of-the-art lighting design and products in order to promote energy efficiency in buildings. Lab staff conduct workshops and provide lighting consultations to professionals on-site and at remote locations. There are product demonstrations, information and displays, a daylighting laboratory, and a 1200 square foot mock-up area at the Lab facility in Seattle.

The Lab, with its staff of seven full-time professionals, is operated by Seattle City Light (SCL) with major funding provided by the Northwest Energy Efficiency Alliance (Alliance). Seattle City Light (SCL) provides substantial in-kind support to the Lab, including facility space and several key staff positions.

The Alliance considers the LDL to be an "infrastructure" project in its regional market transformation efforts.. Infrastructure projects are included within the Alliance's portfolio of projects as a means of providing information within a market, including both (1) information development and (2) information dissemination². Information development generally includes projects that have as their primary objective such things as the verifications of costs and benefits, the demonstration of a technology or practice, the confirmation of consumer "acceptability," or the assessment of "market status." Information dissemination activities are undertaken with the objective of reducing transaction costs associated with obtaining information, improving access to information, and increasing the credibility, intelligibility, or timeliness of information. As an infrastructure project, the LDL engages in both of these types of activities.

This evaluation covers LDL activities in 1999 and through April, 2000. During this period, the Alliance was especially interested in having

² See "Guidance on Market Transformation Infrastructure Investments." Draft paper prepared by the Northwest Energy Efficiency Alliance, October 20, 1997.

significantly greater emphasis placed on regional outreach outside the Puget Sound Region. As such, one of the major areas of emphasis for this evaluation has been an assessment of the degree to which the LDL has attained this objective.

1.1 Evaluation Overview

Objectives

The overall goal of this evaluation is to assess and evaluate the market effects of the Lab and the attainment of its goals and objectives. This evaluation effort is being undertaken in two phases -- Phase I undertaken in the Spring of 2000, and Phase II to be undertaken in the Fall of 2000.

One of the most important objectives of the Phase I market progress report is to assess the attainment of the following specific goals contained in the project statement of work:

- **Support regional market transformation activities by increasing services outside Puget Sound area in efficient quality lighting education, information, and demonstration**
- **Increase clients served outside Puget Sound area by 10% a year**
- **Increase specifier group contacts on our mailing list by 10% a year**
- **Develop and implement an aggressive marketing campaign to increase regional Lab use from an average of 100/week to 150/week by the end of three years**
- **Collaborate with other regional marketing campaigns in support of regional utilities**
- **Promote visits to the Lab by first-time users around the region, including designers and specifiers.**

Methodology

The first phase of this evaluation, based upon a series of qualitative interviews and a review of program activities and documentation, is intended to provide an update on project activities and suggest recommendations that arise from this research. Research conducted in this first phase of the evaluation includes:

- **Interview with LDL Project Manager**

- **Interview with Alliance Project Manager**
- **Interviews with LDL staff**
- **Interviews with LDL Steering Committee members (3)**
- **Attending LDL April Steering Committee Meeting**
- **Interviews with Technical Advisory Committee (TAC) members (10)**
- **Review and update of recent project history**
- **Review of monthly progress reports**
- **Review of monthly website usage statistics**

The second phase of the evaluation will include more quantitative analysis of information gathered through a survey of LDL users and non-users, as well as an update of activities conducted in Phase I.

2. PROJECT HISTORY UPDATE

A previous evaluation of the LDL was conducted in 1998 by TecMRKT Works³. This report included a comprehensive summary of program activities, as well as a baseline assessment of the LDL's target market. The study included assessments examining (1) Lab users and their characteristics, (2) penetration of the Lab into its target markets, (3) why professionals use the Lab, (4) how Lab programs are influencing behaviors, (5) what influences actors' decisionmaking in these markets, (6) the Lab's influence and impacts in the markets, (7) what Lab users would like to see in the future.

This current study is intended to pick up where the previous study left off. There have been a number of important changes made in the Lab's services during the past year and we therefore first include an overview of significant developments that occurred at the Lab during 1999 and the first part of 2000. Following this discussion, we provide a quantitative summary of LDL activity during this period. Finally, we provide an in-depth discussion of Lab efforts to increase its regional outreach beyond the greater Puget Sound region.

2.1 Overview of Recent Lab Developments

For the Lighting Design Lab, 1999 may be characterized as a period of transition. This section describes the significant developments during this period:

- Increased emphasis on regional outreach
- Formation of regional technical Advisory Committees (TACs)
- Increased use of the "First Visit's On Us" Program
- Staffing changes and augmentation
- Updating of exhibit space in LDL facility
- Renewed emphasis on daylighting
- Use of outside instructors
- Acquisition of northwestlighting.com website

³ TecMRKT Works, March 1999: *Lighting Design Lab Market Progress Evaluation*.

- **Changes in organizational structure**

Sources of information for this overview primarily include interviews with Lab staff and stakeholders.

Increased Emphasis on Regional Outreach

During this period, there has been increased emphasis placed on regional outreach activities. As part of this, the Lab promotes course offerings that will provide attendees with continuing education units for their respective professions (AIA credits, LC certification, BOC certification, and CEU credits). Such activities include formal classes and informal presentations, all of which require considerable logistical attention. In particular, the scheduling and coordination (e.g., who is using which projectors on which dates) was highlighted as involving a considerable amount of time. The regional utilities have been quite supportive of this effort, providing both facilities and local coordination support. The shifting of focus to regional outreach has resulted in increased time commitments on the part of all staff. Whereas outreach was estimated to previously consume approximately 50% of the Lab's staff time, this is estimated by the program manager to now total closer to 65% or more. Also in connection with the regional outreach efforts, it was noted that there remains a need to market the programs and classes through more targeted mailings, better designed promotional materials, and increased networking.

Formation of Regional Technical Advisory Committees (TACs)

In order to increase regional outreach, the Lab established a series of Technical Advisory Committees (TACs) to provide input to the Lab on the local market conditions and professional needs related to lighting design and efficiency. TACs were established for Seattle, Portland, Boise, Spokane, and Montana. Membership was solicited from Lab contacts in each area, including utility staff, representatives from government agencies, electrical engineers, lighting designers, and other professionals. The structure is very informal, with in-person and/or telephone meetings held twice annually.

In 1999, the first full year that the TACs were in place, they have become a significant cornerstone of the lab's outreach efforts, and are credited with helping to build stronger programs in the regions. They have had significant input to the development of class and seminar schedules and content. In the Spokane area, for example, this has resulted in class and seminar offerings focused on external and security lighting.

One lesson learned that was cited by the program manager is the on-going need to keep the TACs fresh through on-going efforts to recruit new members for them.

Increased Use of the "First Visit's On Us" Program

In the past, the Lab has provided financial re-imbusement to professionals visiting the Lab facilities in Seattle for the first time. Such visits were felt to be an important step in increasing the exposure of the Lab within the professional community and familiarizing people with the Lab's capabilities. The theory behind this outreach is that, once people have visited the Lab's physical facilities and met the Lab staff in person, they will be more likely to use the Lab as a resource in the future.

After not being promoted for several years, the Lab in 1999 revived its "First Visit's on Us" program. This effort is viewed by Lab staff as being quite successful in soliciting visits from regional customers. Thirty-three visitors came to the Lab's Seattle facilities under this program in 1999, at a total cost of \$7,753 (an average of \$235 per participant).

Staffing Changes and Augmentation

There were also several staff changes in 1999 that required training and start-up time. A new daylighting program manager was brought on board as was an additional C/I lighting specialist. There were also changes in administrative support while staff were on leave to SCL.

Staff at the Lab are at this time reported to be working at full capacity to provide the services they are currently providing. There has been an overall increase in the demand for LDL services, and the Project Manager would like to add positions to facilitate the regional coordination and possible expansion into residential markets for Lab services.

Updating of Exhibit Space in Seattle

A significant investment has been made over the past year to upgrade the exhibit space at the Lab facility in Seattle, the first such changes in over ten years. The changes are intended to make the area more user-friendly for self-guided tours. In addition to displaying specific technologies, the changes include increased emphasis on education -- understanding the components of light and how light impacts our environment -- and integrating this understanding into explanations of how various lighting designs and equipment types influence both the quality and energy efficiency of a lighting design.

Topics that will be included in the finished display include:

- **Visible light spectrum**
- **Impacts of age and task upon lighting needs**
- **Impacts of shading and window glass**
- **Daylighting and modeling**
- **Impacts of light color**

- **Impacts of light focus**
- **Energy efficiency, and cost savings**
- **Lighting controls -- occupancy sensors, dimmers**

When completed, it is expected that the exhibit space will be much easier to navigate and will include a much stronger educational component woven throughout the displays.

Renewed Emphasis on Daylighting

The Lab now has a full-time daylighting specialist on staff -- Joel Loveland. As an architecture professor at the University of Washington, he brings considerable expertise and credibility to the lab's efforts in this area. He has taken a very proactive approach in marketing the lab's services -- visiting local and regional firms to provide informal "brown-bag" lunch seminars. This has led, in turn, to a steady increase in the utilization of the lab's daylighting simulation facilities. His approach is viewed as a potential model for the development of future outreach efforts by the Lab.

Use of Outside Instructors

Some experimenting was done bringing in outside consultants to teach classes (e.g., day lighting) and, according to the Lab Project Manager, this has worked well. Informal feedback indicates that there is value to be derived from occasionally providing a fresh face to clients who have previously attended classes⁴. As possible within budget and time constraints, the Lab plans to utilize this approach more in the future to augment training provided by Lab staff.

Acquisition of northwestlighting.com Website

In September of 1999, efforts were begun to transfer the northwestlighting.com website (another Alliance project) to the LDL. Although initially started as a separate site, the distinctions between this site and the official LDL website had become blurred. When the Alliance funding for northwestlighting.com was exhausted, the site was transferred to the Lab for on-going maintenance and development. Although the Lab was very interested in taking on this effort, additional resources were not added to fund these efforts. As such, since this on-going effort requires approximately .5 FTE, it is possible that this has diverted attention from other areas that were previously receiving greater focus by the Lab.

⁴ Course evaluations are used for many classes and compiled by the Lab on an individual basis; this evaluation has not examined course evaluations on a comparative basis across classes or instructors.

Significant changes that the Lab has made to the site in recent months include the development of an on-line tour of the LDL facilities, as well as additional case study information. In the future, Lab staff hope to expand upon the existing content that is available through the site, focusing on areas that are frequently sources of inquiries through telephone calls or consultations. The residential pages, for example, are viewed as a means of answering many consumer-related questions in a relatively cost-effective manner.

Changes in Organizational Structure

During 1999, considerable attention was devoted to a process initiated to develop a long-term organizational strategy for the Lab. Significant challenges have been encountered using the current funding and staffing arrangements, thereby leading the Lab and the Alliance to explore alternative structures. An organizational development consultant was brought in and charged with the task of researching and evaluating an array of potential options that the Lab could pursue. Five options were developed:

- **Option 1: SCL operates the Lab, Electric League loans employees (status quo at the time)**
- **Option 2: The Lab becomes its own not-for-profit organization**
- **Option 3: University of Washington houses the Lab**
- **Option 4: SCL houses the Lab, and the LDL is established as a 501(c)3 corporation**
- **Option 5: Seattle City Light houses all LDL employees**

These options were presented at the December meeting of the Lab's Steering Committee; it was decided that Option 5 was the preferred path for the Lab to follow, with all Lab employees becoming employees of Seattle City Light. The recommendation has been included in the SCL Energy Management group's budget and awaits approval through the City Council budgetary process.

2.2 Summary of LDL Activity

Data Tracking at the LDL

Data are being tracked at the Lab through a series of discrete worksheets and databases, including:

- **Visitor log database (Access))**
- **Activity summary worksheet (Excel)**

- **Off-site Activity Summary worksheet (Excel)**
- **Mailing list database (Access)**

Work is presently being undertaken to develop an updated database and, as such, substantial time was not devoted to analyzing the current database structure.

Our review did underscore, however, the fact that the Lab has relied heavily upon Excel spreadsheets as a means of tracking activity. Many of the tallies included in these worksheets are done manually, however, thereby involving considerable time. Perhaps more importantly, this approach to tracking significantly limits the level of analysis that can be undertaken without going back to paper files.

Summary of Recent Lab Activity

Table 2-1a compares 1998 and 1999 activity levels at the Lab.

Table 2-1a: Comparison of 1998 and 1999 LDL Activity Summary

	1998		1999	
Activity	Total	Avg/Month	Total	Avg/Month
Tours – number	101	8	155	13
Tours – people	596	50	770	64
Classes	78	7	69	6
Classes - people	1940	162	1832	153
Commercial consultations	153	13	168	14
Residential consultations	118	10	101	8
Comm'ercial mock-ups	30	3	31	3
DayLight consults and mock-up	37	3	14	1

Table 2-1b provides a detailed summary of activities undertaken by the Lab during 1999, as well as year-to-date activity for 2000. Included within this table is also an "average/month" for each of the activities. By

comparing this average figure with monthly activity levels, it is possible to identify several important trends.

Table 2-1b: Summary of LDL Activity in 1999 and YTD 2000

Activity	1999														2000		
	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Total	Avg/ mo	Jan	Feb	Mar
Tours: <i>number</i>	14	9	9	5	18	13	14	15	36	9	9	4	155	13	2	4	3
Tours: <i>people</i>	42	74	30	19	111	45	45	54	133	75	82	60	770	64	22	30	14
Classes: <i>number</i>	-	8	11	4	11	9	2	-	9	8	6	1	69	6	8	15	16
Classes: <i>people</i>	-	263	189	187	242	254	61	-	290	117	179	50	1832	153	213	343	
Commercial consultations	14	11	17	11	14	10	22	14	12	9	17	17	168	14	18	22	17
Residential consultations	17	11	7	15	9	4	6	4	8	5	9	6	101	8	12	16	9
Commercial Mock-ups	6	3	1	4	3	4	6	2	1	-	-	1	31	3	1	1	1
DayLight consults and mock-up	-	2	4	1	2	3	-	-	-	-	2	-	14	1	6	15	10
NWtlighting.Com: <i>Page Hits</i>	2754	2710	3398	3592	4062	4125	6166	7538	7709	7726	8780	7363	65923	5494	8961	9283	13431
NWtlighting.Com: <i>Unique sites</i>	640	687	707	670	651	697	903	1176	1368	1488	1644	1205	11836	986	1446	1672	2055

Source: LDL Monthly Summary Reports submitted to the Alliance by Diana Grant, Project manager

For example, web site usage has increased steadily and is already well ahead of 1999 monthly averages. This is an important trend because, through the web site, Lab staff are able to provide answers to relatively frequent queries that may otherwise be answered via telephone calls. In theory, this allows Lab staff to focus their time and resources on higher-value activities such as in-person consultations and technical research.

Activity levels for 2000 are already exceeding 1999 monthly averages in several key areas, including:

- **Classed conducted**

- **Class attendance**
- **Commercial consultations**
- **Residential consultations**
- **Daylighting consultations**

While some of this increase in activity is the result of seasonal and scheduling variations, the increase in consultations in daylighting and other areas may reflect increased momentum resulting from Lab promotion and activities in these areas. Areas that have, for reasons unknown, seen relatively less activity thus far in 2000 include:

- **Commercial mock-ups**
- **Facility tours**

Summary of Off-Site Activity

Tables 2-2a and 2-2b provide information on the Lab's outreach efforts. As evidenced in Table 2-2a, although the total number of classes and attendance at these classes has declined somewhat, there has been a marked shift from on-site to off-site activity. A significant portion of the lab's classes, and an even greater percentage of the attendance at these classes, was concentrated in off-site activities. Importantly, these data highlight the trade-off between the amount of on-site and off-site activities that the lab staff are able to support. Increased time and resources spent in support of off-site activities limits the time and resources available for on-site activities.

Table 2-2a: Comparison of On-Site and Off-site Activity in 1998 and 1999

Activities	1998			1999		
	On-site	Off-site	Total	On-site	Off-site	Total
Classes	36	37	73	23	46	69
Number in Class	500	1440	1940	238	1594	1832
Commercial Consultations	102	51	153	127	41	168

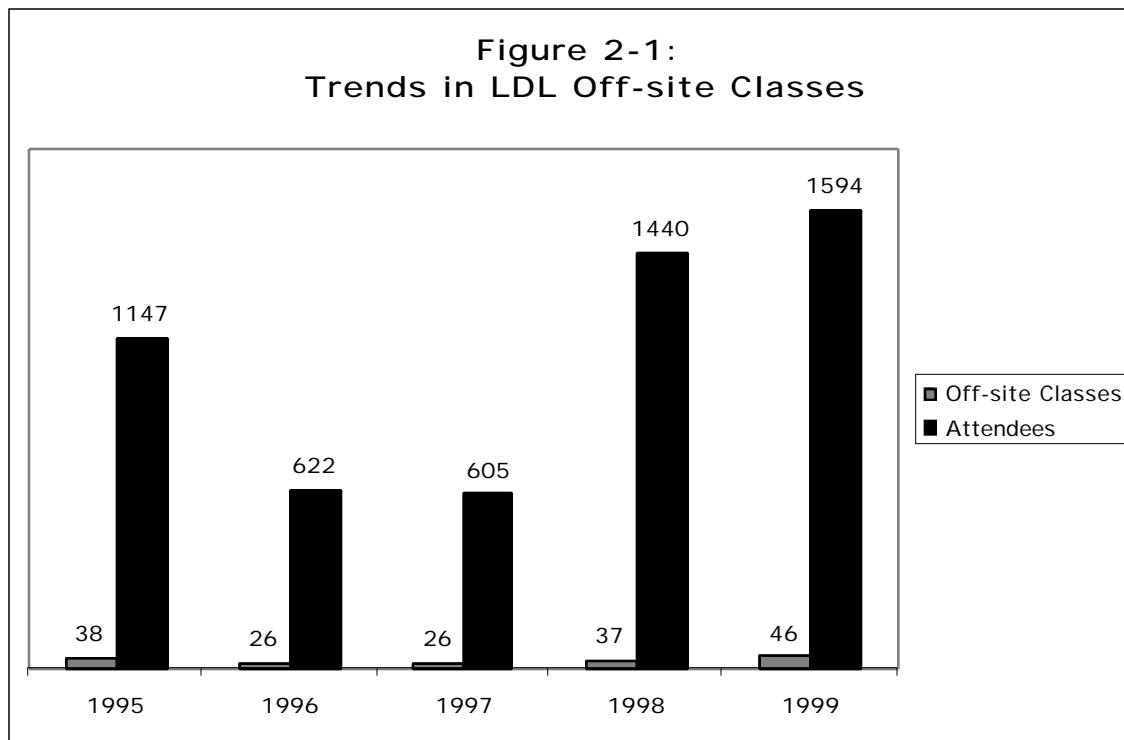
Source: 1999 Offsite LDL Activity Register and Monthly Summary Reports prepared for the Alliance

As shown in Table 2-2b, there has been a marked increase in the Lab's off-site class activities during 1999 as compared with previous years. This reflects an increase in class activity of close to 50% from 1998, and more than 100% from 1997. Commercial consultations, however, are more likely to be conducted on-site at the Lab and were down in 1998 and 1999 from a high of 73 reported for 1997.

Table 2-2b: Trends in LDL Off-site Activity

Activity	1995	1996	1997	1998	1999
Class	38	26	26	27	46
No. in Class	1147	622	605	1141	1594
Commercial Consultations	n/a	n/a	73	51	41

Source: Offsite LDL Event Descriptions -- 1999, 1998, and 1997.



Trends in First-time Visitors

One of the goals for the Lab during 1999 was to undertake activities that would increase first-time visitors to the Lab. During this period, the Lab witnessed an increase of 89% in first-time visitors to the Lab (see Figure 2-2). This equates to an additional 45 visitors each month.

A closer look at these data in Table 2-3 indicates that the majority of this increase has originated from Western Washington (89%), followed by Eastern Washington (12%). Visitors from Oregon remained essentially constant, while visitors from Idaho increased by 3% and Montana decreased by 6% as compared with 1998.

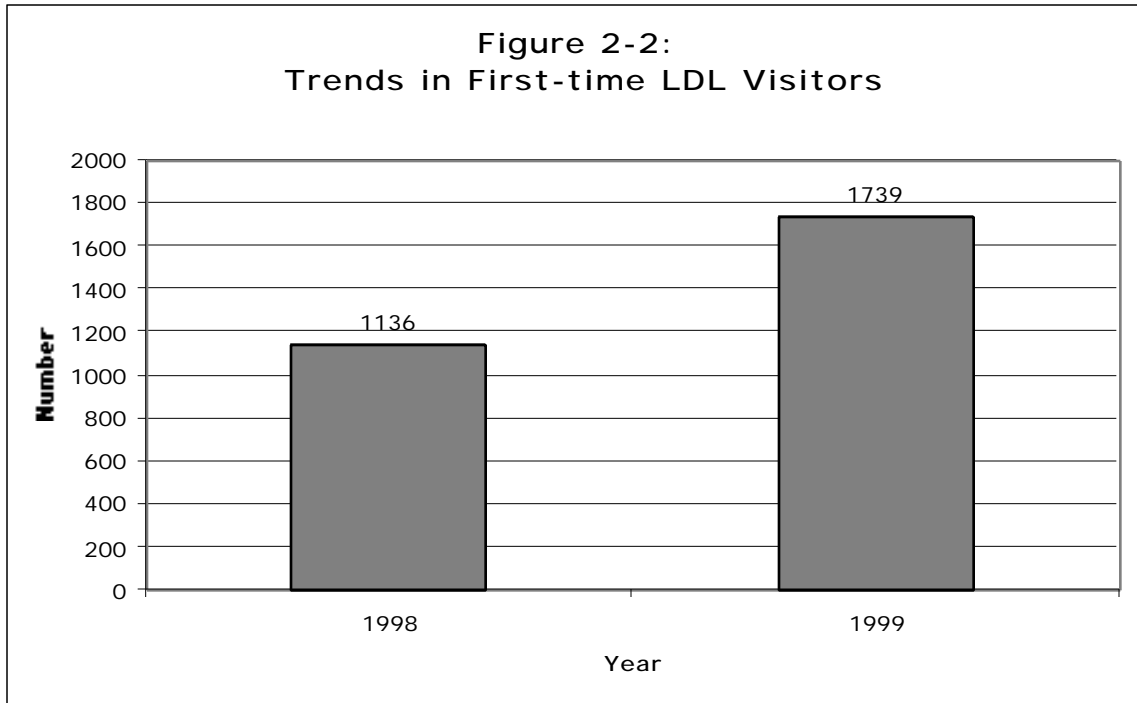


Table 2-3: Trends in First Time Visitors, 1998 - 1999

Visiting from...	Total				Average/month			
	1998	1999	+/-	%	1998	1999	+/-	%
W. Washington	895	1429	534	89%	75	119	45	89%
E. Washington	14	86	72	12%	1	7	6	12%
W. Oregon	22	25	3	0%	2	2	0	0%
E. Oregon	6	5	-1	0%	1	0	0	0%
Idaho	27	46	19	3%	2	4	2	3%
Montana	42	7	-35	-6%	4	1	-3	-6%

Other	130	141	11	2%	11	12	1	2%
Total	1136	1739	603	100%	95	145	50	100%

Source: LDL Monthly Summary Reports submitted to the Alliance by Diana Grant, Project manager

2.3 Regional Outreach Development

Regional outreach development was a primary objective of Lab activities in 1999 and beyond. Below, we provide an expanded discussion of two key areas of this outreach:

- TAC Development; and
- Training and Education.

TAC Development

- Technical Advisory Committees have been established for Boise, Montana, Portland, Seattle, and Spokane.

Each TAC met twice during 1999. Although there are typically 20-25 members listed for each TAC, it appears from meeting minutes that a small subset of these groups (5-8 people) attend meetings consistently. From the Lab's perspective, the TACs have provided significant input to the development of regional class schedules and course offerings and have therefore fulfilled their intended roles.

Feedback from TAC members (two persons from each TAC, with varying levels of involvement, were interviewed) indicates that there are varying levels of involvement and commitment among these group. Those that are active in the TAC process provided positive feedback and felt that they were generally benefiting from the experience. Those that are less active indicated that the process turned out to be something different than they were anticipating. Expectations varied somewhat, with some members expecting to provide information, and others hoping to obtain information. It was also noted that smaller firms, and especially solo practitioners, have limited time available to spend on such activities unless they are directly benefiting from the process. A review of attendance at the TAC meetings indicates a consistently high rate of attendance from utility staff and representatives from governmental agencies -- organizations that are more likely to be able to spend time on such activities.

Another related comment offered relative to the TAC process was the lack of representation from distributors, manufacturers representatives, and in some cases, electrical engineering firms. This latter group provides, in many projects, the bulk of the lighting specification under subcontract to the prime architect. A preference was also expressed for in-person meetings rather than conference calls. While higher in cost, the in-person

meetings were felt to be more effective from at least one member's perspective.

Training and Education

During 1999, a variety of seminars were conducted throughout the region. The TACs have played an important role in providing the Lab with guidance on the selection of topics for these classes. In at least one area (Spokane), for example, these classes have been modified to reflect the interests of the local market in external and security lighting.

Feedback from the TACs and customers attending the classes indicates that it is difficult for people to take time away from work for classes on multiple occasions. In response to this feedback, the Lab is planning for 2000 a more consolidated approach. Rather than scheduling multiple classes and events several times per year, the Lab will hold a larger event that is more along the lines of a conference -- including a trade show and a wide selection of classes.

A summary of classes offered in 1999 is provided on the following page in Table 2-5.

Table 2-5: Regional LDL Classes Offered During 1999

State	City	Types of Classes Offered
Oregon	Portland	Lamps, Luminaires, or Equal; Intro to Lighting; Daylighting; Daylighting & productivity; Lighting Theory & Practice; Lighting and Visual Environment for Senior Living; Lighting and Human Factors; Skylighting for Commercial and Industrial Bldgs.;
	Eugene	Lamps, Luminaires, or Equal, Lighting theory & practice; Lighting and Human Factors
	Salem	Glazing
Montana	Missoula	Lamps, Luminaires, or Equal, Lighting Theory & Practice
	Butte	Lighting Audits
	Helena	Lighting Fundamentals
Washington	Bellingham	Fundamentals of Lighting
	Everett	Fundamentals of Lighting
	Longview	Lighting Fundamentals
	Richland	Lamps, Luminaires, or Equal
	Seattle	Controls, Glazing, Light & Color; Daylighting & Productivity; Retail Lighting
	Shelton	Lighting Issues, Lamps, Ballasts and Luminaires
	Spokane	Lamps, Luminaires, or Equal, Lighting Theory, process & Practice; Lighting Fundamentals; Skylighting for Commercial and Industrial Bldgs.; Lighting Strategies to meet code;
	Tacoma	Exterior Lighting; Exterior Security Lighting;
	Wenatchee	Fundamentals
	Yakima	Color and Light
Idaho	Boise	Lighting & AC (ASHRAE); Lighting theory, process, and practice; Lighting Audits & Retrofits; Skylighting for Commercial and Industrial Bldgs.;
	Idaho Falls	Lighting Audits & Retrofits

Mailing List Development

A cornerstone of the Lab's outreach efforts is its mailing list of lighting professionals. The Lab maintains its mailing list, which includes a wide array of individuals, based upon visits to the lab, class registrations, and other contacts that individuals have with the Lab. Until recently, this mailing list was used for the LDL newsletter as well as class and event announcements. The newsletter is now offered only in an on-line format.

A specific objective for the Lab mailing list in 1999 was to increase its size by 10% for lighting specifier contacts. During the Fall of 1999, the Lab undertook an effort to delete names and addresses that were no longer valid resulting in a net decrease in the number of contacts on the Lab mailing list as shown in Table 2.6. In reviewing the mailing list by type of profession, no significant trends were observed in this decrease. Importantly, although there are fewer specifiers in this list, the list overall is likely better quality than previously.

Table 2-6: LDL Mailing List Size

Date of Count	No. of Names on List
December, 1997	7182
April, 1999	7550
September, 1999	7744
May, 2000	6311

3. NORTHWESTLIGHTING.COM

In September of 1999, northwestlighting.com became the official website for the Lighting Design Lab. Although initially funded as a separate Alliance venture that was intended to become self-sustaining, this goal was found to be difficult to attain. Moreover, since Lab staff were closely involved with the development of the site and its content, the fit between the Lab and the site was quite logical.

We provide below an overview of the site, as well as an overview of site usage statistics and trends.

3.1 Site and Content Development

As of the time this report is being prepared, the LDL website contains the following major sections:

- **Classes & Workshops**
- **Commercial Lighting**
- **Home Lighting**
- **Daylighting**
- **Search for Manufacturers**
- **Mock-Ups**
- **Library News**
- **Downloads**
- **Upcoming Events (calendar)**
- **LDL Tour**
- **Notable Lighting Locations**

In addition to on-going upgrades in the site, the Lab developed a virtual tour that provides visitors with a feel for the Lab's facilities. It also recently put its newsletter online instead of mailing it out to customers. Two of the more popular features of the site are the calendar and the ability to sign up for classes on-line. The Lab recently began offering a listserve that is used for disseminating information about upcoming activities, and subscriptions to this listserve have increased steadily.

This evaluation has not included a formal assessment of user feedback, but such feedback will be important to the Lab as it continues to invest resources in this potentially powerful communication and education tool. The Lab is considering conducting user focus groups as well as an on-line survey for current users.

3.2 Usage Statistics and Trends

Customer use of northwestlighting.com has increased dramatically since the Lab has taken over the site. This is said to result from two distinct efforts: (1) continued development and enhancement; (2) increased promotion and strategic marketing with internet search engines. This latter step involves understanding the ways in which search engines catalog and search sites so that the Lab can be sure to include certain key words as file names and page headers. Importantly, maintaining and promoting this website requires a substantial investment of time and staff resources. Thus far, there has not been any increase in Lab budget to accommodate these activities.

An Increasing Number of Visitors

As a cursory measurement of a site's popularity, one can turn to site statistics that report the number of hits, or downloads, for each page contained on the site. In April, 2000, a total of 12,066 pages were downloaded to internet browsers. This number has been steadily increasing each month due, in large part, to the use of "Meta-tags" that are used by various search engines in developing responses to search queries. As shown in Table 3-1, some limited information is available about the origin of these visitors. The origin of the majority of visitors is unresolved. Generally, users arriving at the site via AOL, for example, are reported as "not resolved." Similarly, users accessing the site through "bookmarks" or "favorites" that they have established on their web browsers are reported as unresolved.

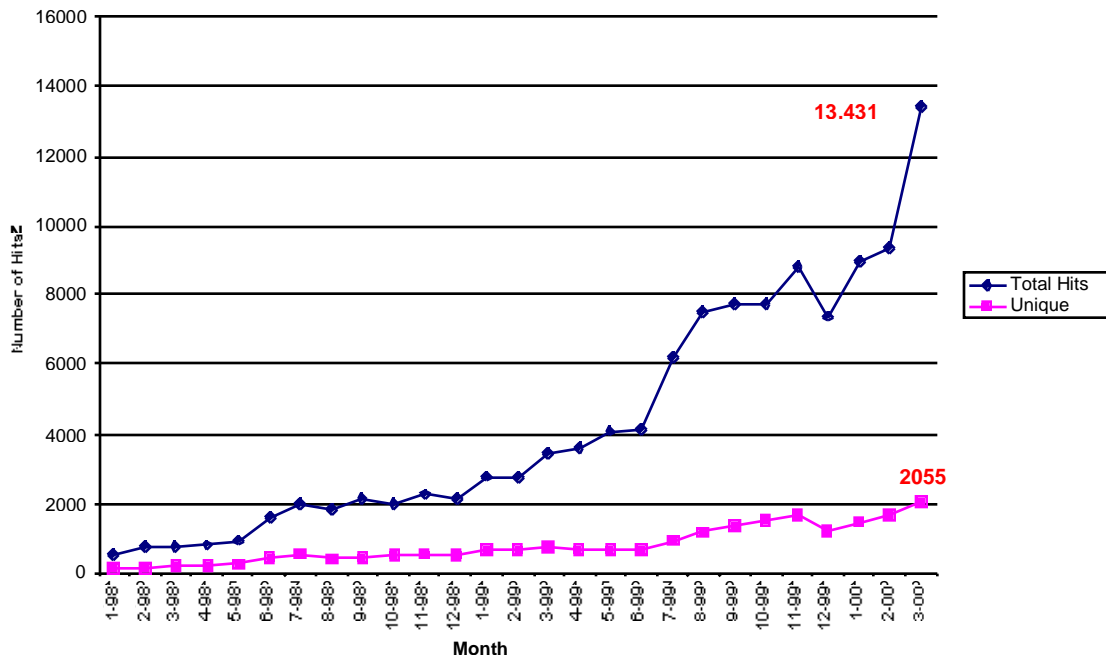
Table 3-1: LDL Website Visitors (April, 2000)

Origin of Visitor	Number	Percent
[unresolved]	4237	35
US Commercial	3341	28
Network	2145	18
US Educational	696	6
United States of America	652	5
US Government	141	1
US Organization	96	1
International	758	6
Total	12066	100

Figure 3-1, prepared by Randy Smith at the Lighting Design Lab, illustrates the trend toward increased site use. Perhaps more important than the number of total hits the site received is the number of unique users who accessed the site. As the data indicate, 2055 of the visitors during the month of March were from unique sites of origin.

Figure 3-1:

Northwestlighting.com Use Through March



Top Destinations Among Visitors

In terms of hits on specific pages, Table 3-2 provides a summary of activity of the top pages during April, 2000 (the most recent month for which complete data were available). The page column represents the URL for the file that has been viewed. Monthly use of the site is spread very thin across all of the pages, with the percentage of page hits dropping to one percent of the total quite quickly. As shown in Table 3-3, aside from the entry pages to the site, six of the site pages received greater than 1% of the total activity at the site during this month. The majority of pages had fewer than 100 hits (see Table 3-3, below). These data underscore the fact that a relatively concentrated set of pages are receiving the most attention by visitors to the website.

Table 3-2: LDL Website Activity for Top 12 Downloads (April, 2000)

Rank	Page	Description	Number of Page Hits	Percent of Total Hits
1	/index.html	Home page	2557	21 %
2	/ldl/index.html	Home page	517	4 %
3	/calendar/index.html	Calendar of events	504	4 %
4	/residential/index.html	Residential content and services	395	3 %
5	/commercial/index.html	Commercial content and services	352	3 %
6	/vendors/index.html	Lists of Vendors	301	2 %
7	/tour/index.html	Beginning of Lab tour	242	2 %
8	/daylighting/index.html	Daylighting Content and Services	162	1 %
9	/library/index.html	Library Content	152	1 %
10	/residential/kitchen.html	Residential Kitchen Lighting	144	1 %
11	/ldl/locations/index.htm	Directions to LDL	140	1 %
12	/commercial/articles/softwarepro.htm	Review of Lighting Software	139	1 %

Table 3-3: Hits per Page (April, 2000)

Number of hits received	Percentage of Pages
<100 hits	94%
<50 hits	82%
<25 hits	61%

Top Categories of Information Accessed by Visitors

Table 3-4 provides a summary of website activity across generic categories of page types. These statistics, derived from the top 100 page transfers (i.e., the 100 pages within the site most-frequently transferred or

downloaded from the site by an internet browser), account for approximately 83% of the total site activity.

Table 3-4: Distribution of Top 100 Page Transfers by Subject Area (April, 2000)

Page Type / Subject	Number of Hits	Percent of Total Site Transfers
Home Page	3074	25%
Commercial Lighting	2009	17%
Virtual Tours	1927	16%
Residential Lighting	1501	12%
Other (library, staff info, etc.)	858	7%
Class and Event Information	608	5%
Software Downloads	90	1%
Total Downloads in Top-100	10067	83%
<i>Total</i>	<i>12066</i>	<i>100%</i>

Approximately 25% of the activity reported in page hits may be viewed as entry to the site -- walking through the door. Note, however, that some entrants to the site may be "bookmarked" directly to a more frequently-visited section or page. The next largest groups of users tend to utilize pages that are related to commercial lighting and virtual tours. Note that, although the data in Table 3-2 indicate that residential pages are more popular than pages related to commercial sector installations, the data in Table 3-4 indicate otherwise and show that total visits to residential pages are fewer in number.

Need for an In-Depth Understanding of Visitor Navigation

While the trend is definitely toward increased usage, the Lab is limited in its ability to understand the ways in which users navigate the site and utilize site resources. For example, are users going straight to the calendar page or are they also visiting other pages as well? Software is commercially-available that will analyze site navigation patterns. The Lab is considering the use of such software during the coming year as a means of better understanding user needs and practices.

As another example, it would be beneficial for the Lab to understand better how people use the Lab tour. While the tour index is quite popular and appears to be the second most popular area of the site (see Table 3-4, above), user activity appears to drop off quite quickly, indicating that fewer of these visitors actually take the complete tour (see Table 3-4 below).

Table 3-4: Example: Activity for On-line LDL Tour (April, 2000)

Page	Number of Hits
Lab tour index	230
First tour page	89
Remaining tour pages	18 - 70 (varies with page)

4. SUMMARY AND RECOMMENDATIONS

The previous evaluation conducted by TechMRKT included a number of recommendations for consideration by Lab staff, including:

- Careful management and direction since there are limited resources for off-site and on-site activities.
- Continue activities with professional associations and visits to companies in the Seattle area
- Explore alternative types of off-site interactions (e.g., charettes)
- Explore potential differentiation strategies in services offered to small and large firms.
- Update and target mailing list.
- Refine list of targeted professionals
- Identify ways to communicate with large end-users in the various regions (as opposed to specifiers)
- Increase awareness of lab by targeting associations at a distance from the lab
- Encourage Lab awareness through word-of-mouth and communicating through professional associations.
- Examine whether and how the Lab might encourage repeat business.
- Survey non-users who attend other meetings at the Lab to determine why they are not using services.
- Provide e-mail announcements of lab activities; include registration on-line and at front desk.
- Continue already strong use of product displays.
- Continue mock-up facility services.
- Promote the use of the daylighting facility.
- Raise awareness levels and increase content to make website more compelling.
- In this section, we provide a summary of the Lab's progress toward goals established with the Alliance, as well as specific recommendations for consideration as the lab moves forward.

The Lab has implemented several of these recommendations. The Lab's mailing list has been cleaned up to minimize out-of-date information. Marketing efforts have included increased presence at professional association meetings and advertising in professional journals. The Lab's website has been improved, and an e-mail listserve has been established to disseminate information. Finally, the Lab has recently increased dramatically its efforts to promote daylighting services and modeling.

4.1 Progress Toward Goals in 1999

In Section 1.1, we outlined specific goals that the Alliance and the Lab established through a statement of work. We review progress toward each of these goals below.

- **Goal No. 1:** Support regional market transformation activities by increasing services outside Puget Sound area in efficient quality lighting education, information, and demonstration.

Interim Assessment: The program has significantly expanded its activities outside the Puget Sound region. This has largely been in the form of education and training initiatives and, to a smaller extent, technical services. The data in Table 2-2b document the progress made in this area.

- **Goal No. 2:** Increase clients served outside Puget Sound area by 10% a year.

Interim Assessment: The Lab serves clients in many ways; since this goal is not specific in the types of services it means, progress in this area is difficult to assess. We view the Lab as having three broad types of contact with individuals and firms: (1) promotional/marketing; (2) education and training, and (3) technical assistance. Lab promotion and marketing has definitely increased outside the region; the majority of actual first-time visitors, however, continue to come from the greater Puget Sound region. Education and training outside the Puget Sound region has definitely increased, as evidenced in Figure 2-1 by both the number of classes offered outside the region, and the number of persons attending these classes. Daylighting consults have increased for clients outside of the Puget Sound region. Other forms of technical assistance offered to clients outside the Puget Sound region (off-site commercial consults) do not appear to have increased (this is, however, an excellent example of something that could be more easily assessed if the Lab had an electronic contact management system in place). Now that the Lab has established a regional presence in training, it may be time to explore new ways to forge links with customers in these areas that will provide the benefits of the Lab's technical assistance services in daylighting and in other areas.

- **Goal No. 3:** Increase specifier group contacts on our mailing list by 10% a year.

Interim Assessment: Based upon mailing list counts made available to the evaluation team, the net size of the mailing list has decreased. This decrease is the result of efforts to cull invalid addresses from the list, making it impossible to compare the number of previous and current contacts. Regardless of the size of the current list, however, it is likely better overall in quality than it was previously.

- **Goal No. 4:** Develop and implement an aggressive marketing campaign to increase regional Lab use from an average of 100/week to 150/week by the end of three years

Interim Assessment: The Lab has aggressively marketed its services in the past year through advertising and seminars / presentations to lighting professionals. Although we were not able to document the original baseline estimate of 100 Lab users per week, we have documented that visits to the Lab have increased significantly -- almost 50% -- in the past year. Daylighting services, in particular, have gained considerable momentum. For 2000, the Lab is considering expanded advertising in professional publications and increased visibility at conferences and trade association gatherings.

- **Goal No. 5:** Collaborate with other regional marketing campaigns in support of regional utilities.

Interim Assessment: Regional utilities are well represented on the regional TACs and are consulted in the development and promotion of regional outreach efforts. There appears to be somewhat limited direct support to programs offered by utilities in the regions. This is not to say that contacts do not occur, but that these relationships may not be formalized as much as they could. This may be linked to the fact that most utility efforts in these areas have been scaled back markedly in recent years. Importantly, this may change over the next year as supply constraints and pricing considerations increase utilities' focus on efficiency as a resource.

- **Goal No 6:** Promote visits to the Lab by first-time users around the region, including designers and specifiers.

Interim Assessment: Visits by first time users have increased dramatically, as shown in Figure 2-2. First-time visits increased from 1,136 first time visitors during 1998 to 1,739 first time visitors during 1999. These visitors have been largely from the Western Washington area, however, thus indicating that it is going to be difficult to lure first-time visitors from other areas of the Northwest

region. This is re-enforced by feedback from TAC members indicating that, although the First Visit's on Us program is beneficial, it remains difficult for professionals to take time off from work to travel to Seattle for the purpose of using the Lab facilities.

4.2 Recommendations

Before offering our recommendations, it is important to note that this phase of the evaluation has included a relatively limited amount of research. As such, the recommendations rely heavily upon our expertise in market transformation, as well as the objectivity that we bring as disinterested parties taking a fresh look at the Lab and its programs. There are likely to be both practical and political limitations to some of these recommendations that only those closer to the situation will fully understand. Recommendations for consideration by the Lab and the Alliance have been grouped into the following categories:

- LDL Outreach Strategy
- LDL Operations

Recommendations on the Lab's Outreach Strategy

Several specific recommendations are offered on the Lab's outreach strategy.

Expand technical assistance component of the Lab's outreach

Regional outreach efforts have thus far generally focused on education and seminars. Substantial progress has been made in this area, and a solid foundation appears to be formed in each of the regions. Over the next year, a key challenge that the Lab faces is how to link the technical assistance services that the Lab provides to these regions. One model that we favor as a relatively low cost means of accomplishing this is that of the Agricultural Extension Service. Adapting this approach, a Lab representative (whether from the Seattle facility or a local expert with strong personal links to the Lab) could establish regular office hours to be available for consultations (e.g., 1st and 2nd Tuesdays of each month).

Include more proactive outreach with classes and technical assistance

The model used in the daylighting area -- proactive outreach and visits to firms and individuals -- may serve as a model for other services that the Lab offers. Such an approach may aid in increasing the utilization of the

lab's mock-up facilities, for example, or commercial lighting consultation services.

Focus TAC on members who can provide strategic input

From our interviews with the regional TAC representatives, it appears that there are varying levels of expectations / understanding as to why they are on the TAC. Additionally, although the Lab has 20+ people on the list of TAC members for each area, it appears from the meeting minutes, as well as from our interviews, that a relatively small subset of these members is able to attend these meetings regularly. As such, it may be beneficial to refine the TAC objectives and limit membership to those who are truly in the best position to provide strategic input.

Facilitate informal roundtable lunches

Related, again, to our discussions with TAC members, it appears that some of these people are most interested in the networking opportunity that this affords, and view their participation as providing a way for them to stay abreast of current technologies. Building upon this, another low-cost form of outreach that the Lab may wish to facilitate would be an on-going series of roundtable lunches. These could be coordinated by the Lab's extension agent with the local utilities, and perhaps catered by local distributors, as a means of building local networks that will continue to be self-sustaining and serve as a customer base for the Lab. As an additional benefit, this step would aid in focusing the group of TAC representatives whose strategic insights the Lab seeks to cultivate.

Recommendations on the Lab's Operations

This evaluation effort was not intended to focus on day-to-day Lab operations; nevertheless, the following recommendations should be considered based upon our observations to date.

Explore options for electronic contact management systems

It appears that both the Lab and the Alliance would benefit from a tracking system that is oriented toward contact-management. Lab staff are, effectively, account managers, and would benefit from having the tools used in other industries to manage accounts. Within such a system, each contact that the Lab or the Lab staff has would be linked to (1) a person and a firm (including address, profession, utility), (2) a specific type of activity (class, seminar, mock-up, telephone inquiry, tour, etc.), (3) a date, and (4) notes. This type of system, although potentially more costly to set up initially, would provide long-term cost savings to the Lab and numerous strategic benefits to both the Lab and to the Alliance. Analyses that are presently not feasible, but that could be undertaken with such a system in place, include:

- **frequency and patterns of contact with individuals and firms;**
- **frequency of repeat visitors, and what draws these visitors back;**
- **frequency of contact with individuals in specific regional areas, and relationship with promotional activities undertaken in these areas;**
- **demand for specific types of Lab services (e.g., inquiries into sources of fixtures, or availability of mock-up services);**
- **patterns in Lab use (are people who visit the Lab more likely to have follow-up contact and, if so, for what types of services?).**

In short, such a system would allow the Lab to better manage its customer relationships and understand the needs of the market that it is trying to transform.

Expand class and service evaluation forms

The Lab is to be commended for the time it has put into developing a feedback process for its training efforts. Two important pieces of information could also be captured through this process that would aid the Lab substantially in its efforts to develop and revise its market transformation strategies:

- **How will the information that participants have gained through classes (or other contacts, for that matter) be used?**
- **What additional services would customers be likely to take advantage of that would help them in specifying more efficient lighting on a regular basis? In this area, the Lab may also wish to provide a selection of potential services that customers could rank on a scale of 1-5.**

One other issue that would be informative to ask customers about is the financial value that they attach to the services they have received. If a customer has completed a class, for example, what dollar value would they attach to the information they obtained? This would aid the Lab in ascertaining which services that it offers are most valued in the market.

Modify status report format to include analysis of trends

The current monthly status report format presents a large amount of information, but does not readily facilitate the analysis of trends. Since the Lab tracks activity levels on a monthly basis for its own purposes (these summary tables are not currently included with the monthly reports, however) it would be relatively easy for the Lab to include summaries of these activities to date and highlight salient trends as they appear. These trends are important to understanding the path along which the Lab has already travelled, as well the potential road ahead.

Monitor website user navigation trends and needs

The LDL website clearly has the potential to play a significant role in the Lab's mission. To understand more clearly how visitors actually use the website, and to tailor the site to address these patterns, the Lab will need to pursue with its Internet Service Provider (ISP) the use of commercially-available software that will facilitate such analyses. Additionally, as the Lab refines its market transformation strategy over the coming months, we continue to support the use of focus groups and on-line surveys to obtain as much direct user feedback as possible.