



Institute for
Environmental
Solutions



2006 ANNUAL REPORT

761 NEWPORT STREET
DENVER, CO 80220

WWW.I4ES.ORG

The Institute for Environmental Solutions is an independent non-profit organization delivering proactive technically sound solutions to complex environmental and natural resource problems—without unwanted side effects.

Scientific solutions for a better environment



A Letter from the Executive Director

January 2007

Greetings Friends:

As the new Executive Director and former President of IES, I have been honored to be a part of this unique and dynamic organization. The IES Board, staff members, volunteers, and Associates bring centuries of experience, creativity and enthusiasm that has made 2006 a great year for the Institute. The Board of Directors has been a fantastic complement to the staff, staying connected, and helping to brainstorm our sustainable plans for organizational success for this past year, and into the future. The *Sustainable Funding Plan*, and *3-Year Organizational Plan* are clear strategies to obtain continued funding and to establish an approach to effectively selecting projects that support our mission, effect social change, and have a positive environmental impact on a local, national and global scale.

As a new organization, the biggest challenge for IES has been establishing a track record and sources of sustainable funding. We are not a membership organization, and therefore not defined by a certain group of people, but rather by maintaining an independent, objective scientific approach to solving environmental problems, without unwanted side effects. It is both fortunate and unfortunate that we are not defined by a specific cause or group of supporters; unfortunate because as one IES partner said, “*Science is a hard sell.*” We have found this to be true time and time again, but we also believe that there is a mounting paradigm shift in environmental science. People are starting to realize that the only way to solve our multiple environmental challenges is through hard science and with strategies based on science that lead to better, more effective policies.

We believe the only way to establish effective, technically sound scientific strategies to solving environmental problems is through the IES stakeholder-based approach. IES works *with* partners, stakeholders, and clients, to work toward positive outcomes by:

- Asking difficult questions
- Tackling complex, seemingly intractable problems
- Challenging the status quo
- Testing and demonstrating technically sound potential solutions in the real world
- Objectively measuring effectiveness
- Disseminating results, and providing educational outreach and information.

The IES approach emphasizes an element critical to a successful remedy—communication and integration across technical, organizational, and social barriers.

This 2006 Annual Report marks the most successful year of IES thus far, with the most financial support, and furthest strides in terms of our two main projects: *The Tree Project: Integrated Urban Environmental Improvement Through Tree Selection and Management*, and *Emerging Contaminants—Causes, Effects; Linking Science to Effective Action*. The Tree Project staff and volunteers completed Phase 1, launched Phase 2, and established a key partnership with the City of Golden, Colorado, to carry out the much anticipated scientific study that will provide usable results for positive environmental change in the Front Range. Background research for Emerging Contaminants is nearing completion, and we are eager to begin Phase 1 of the project in 2007.

With the support of the skilled staff members, volunteers, and Institute Associates, 2007 is sure to build on our 2006 accomplishments, as we continue to believe in our mission and “sell the science” that gives us wings.

Sincerely,

Carol E. Lyons
Executive Director



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2006 IES Staff, Associates and Volunteers

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Denver, Colorado

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Casey Laycock
Project Intern
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Principal, The Seacrest Group
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Institute for Environmental Solutions Introduction

The Institute for Environmental Solutions (IES) is a Denver-based, non-profit 501(c)(3) organization dedicated to addressing complex environmental challenges. We advance objective, integrated solutions to our region's most pressing environmental concerns, such as air and water quality, and pollution control.

IES uses sound, independent science to:

- Find potential solutions
- Develop objective evaluation methods
- Implement Strategies
- Measure and demonstrate cost-effectiveness

Over the past two years, IES has grown to 8 paid staff members, 11 active volunteers, and 18 Institute Associates working hard to accomplish our mission to deliver proactive, technically sound solutions to environmental and natural resource problems without unwanted side effects. Throughout 2006, our two main projects, The Tree Project: Integrated Urban Environmental Improvement through Tree Selection and Management, and Emerging Contaminants—Causes, Effects, Linking Science to Effective Action, have advanced past the conception and planning stages and reached important steps to achieving quantifiable results in 2007.

Our Thanks

To the sponsors who helped make 2006 successful!

Colorado Department of Public Health and Environment, Pollution Prevention Advisory Board
 Xcel Energy Foundation
 SmartWool Advocacy Fund
 Boulder Department of Water Conservation
 Considine Family Foundation
 Brownstein | Hyatt | Farber | Schreck, P.C.

Our Thanks

To the committee members who contributed to a successful Tree Project Phase 1

Tree Project Steering Committee

Brian Braa, RLA
 Landscape Architect/
 Planner
 Regenerative Studio

Mark Fox
 Director, Plant Projects
 Xcel Energy

Liz Gardener

Kristen Gray

Sheila Hayter

Carol E. Lyons

Desiree Thorp

Keith Wood
 East Area Community Forester
 Colorado State Forest Service

Tree Project Stakeholder Workshop Planning Committee

Ian Anderson
 Landscape Architect
 Design Studios West, Inc.

Alana Burrow

Kristen Gray

Jack Hoopes

Carol E. Lyons

Desirée Thorp

Roberta Tolan
 Director of Education
 Denver Botanic
 Gardens

2006 Institute for Environmental Solutions Activities



The Tree Project: Integrated Urban Environmental Improvement Through Tree Selection and Management

Project Goals, Objectives, and Plan

The Tree Project Steering Committee established the specific project goals of The Tree Project in January : to identify how trees can be used to optimize energy and water conservation, carbon sequestration and air quality. Long term goals are to improve greenscape design and tree-planting cultural practices in rapidly growing Front Range communities. Objectives of The Tree Project are to conduct an objective, scientific study to measure the environmental costs and benefits of urban trees and to identify the tradeoffs between resources required and services gained. We seek to establish partnerships with local organizations to increase community outreach and identify future research needs on the value of urban trees, to assure long-term environmental improvement. During the first half of 2006 IES researched the best approach to quantify trees' effects on our environment. The draft Project Plan has been revised, presented to stakeholders, and will be finalized early in 2007. The plan includes scientific analysis through field measurements and computer modeling, and distribution of results in a Technical Report.

Presentation to the Front Range Urban Forestry Council (FRUFC) – July 27, 2006

On the invitation of Keith Wood, Colorado State Forest Service, IES presented The Tree Project to FRUFC members representing the entire metropolitan and Front Range area. IES reviewed the project goals and presented the science behind urban trees and their effects on air quality, energy and water conservation, and carbon sequestration (global climate change mitigation). IES is collaborating with FRUFC in the project implementation, through enthusiast cooperation and expertise of urban foresters from all over the Front Range.

Stakeholder Advisory Workshop – November 2, 2006

IES held the first Stakeholder Advisory Workshop at the Denver Botanic Gardens. The 39 attendees represented diverse backgrounds: forestry, energy, water, government, landscaping, planning, local business, and education. IES presented The Tree Project background research, project plan, goals, approach, and budget. Breakout sessions were held to discuss and record feedback on stakeholders' views. Major outcomes included discovering what trees mean to different participants, and how we can use this in our study. The Tree Project will be able to address the specific concerns of various interests and will be able to show how to use trees as a tool to tackle environmental problems in a way that helps each industry. The need for The Tree Project was verified and validated by workshop participants.

City of Golden i-Tree Analysis – December, 2006

In partnership with the City of Golden City Forester, Dave High, and Colorado District Forester, Allen Gallamore, IES obtained the street and park tree inventory in the City of Golden, and applied the i-Tree program to determine the structure, function, and value of Golden's urban forest. Through the use of i-Tree, a U.S. Forest Service computer modeling program, IES determined that Golden's population of trees provide nearly \$234,000 worth of environmental and aesthetic benefits, with nearly \$50,000 in energy savings alone. Results of the analysis showed that the replacement value of Golden's Aspen, Siberian Elm, Silver Maple, and other tree species is more than \$8 million. This initial analysis is the first step in realizing the true value of established trees and what they are worth to the Front Range through the environmental services they provide in stormwater benefits, air quality improvement, energy conservation, and carbon sequestration.



Stakeholder
Advisory
Workshop,
November 2,
2006,
Denver
Botanic
Gardens



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Publications

IES is pleased to announce two publications: The urban tree science tutorials, *Urban Forest Services and Impacts*, overviews of the scientific processes through which trees impact the environment in terms of energy savings, air quality, global climate change through carbon sequestration, and water conservation, and *The Colorado Tree Ordinance Guide*, a guide to several Front Range community landscaping ordinances, highlighting those that include Xeriscape principles.

The Phase 1 Report

Following the November 2 Stakeholder Advisory Workshop, IES began work on the final report for Phase 1, which is now available on the IES website. This report provides an overview of the work involved in Phase 1 and initial plans for Phase 2. The report includes the history of The Tree Project, preliminary research, the project plan, and results of the workshop.

Focus on Education and Outreach

Throughout the year, IES has discovered new methods to make The Tree Project goals have a state-wide and national effect, as well as touch Colorado communities on a personal and local level. IES has developed proposals for the following exciting additions to Phase 2:

Urban Tree Science Database

Low-Income Neighborhood Outreach and Education Program

Colfax Avenue Tree Canopy Improvement Pilot Project

Emerging Contaminants - Causes, Effects, Linking Science to Effective Action

2006 was an exciting year for the Emerging Contaminants project. IES acquired new staff members, associates, and interns to work on research and funding resources to kick the project into high gear, as the issue gains importance in the science community and in the media.

17th Annual South Platte Forum Poster Presentation October 25-26, 2006, Longmont, Colorado

Graduate Student Intern, Aaron Guitierrez, presented a poster at the South Platte Forum. The poster summarized IES's goals, and addressed tough issues like pollution prevention, known and unknown sources of contamination, and the multiple stakeholder-approach.

Phase 1 - Research and Collaboration

IES' proposed integrated approach to emergent contaminant problems includes involvement of all potential stakeholders, from drug manufacturers to pharmacies, doctors, hospitals, and hospices, in addition to the conventional interests of wastewater treatment, drinking water suppliers, government agencies, and the scientific community in a collaborative project to conduct objective scientific and economic analysis. IES staff has researched the sources of trace contaminants and existing programs in other states. We have begun to develop more in-depth knowledge of this large issue. This research has led to four unique project proposals, which IES aims to launch in 2007, in possible collaboration with the Colorado Department of Public Health and Environment.

Project Proposals

The IES Research team has identified four project ideas for Phase 1:

Pharmaceutical Take-Back Pilot Project

On-line searchable PIE (Pharmaceuticals in the Environment) Database

Wastewater Treatment Plant Pilot Project for Removal of Trace Contaminants

IES-CDPHE participation in the AWRA Summer Specialty Conference: Emerging Contaminants of Concern in the Environment: Issues, Investigations, and Solutions



South Platte River

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Funding

Currently, the main source of operating and project funding resources are through private foundation and state government grants. IES continues to seek new funding opportunities, and regularly submits proposals to private foundations, and state and federal government. IES has developed a Strategic Plan for development of the organization during 2006, and the new Sustainable Plan for development is underway. Both will be finalized early 2007.

Partnerships

IES is proud to be a member of the Colorado Nonprofit Association and Metro Volunteers. We are also pleased to be working in collaboration with Colorado State Forest Service, the National Renewable Energy Lab, Denver Water, Xcel Energy, the Colorado Department of Public Health and Environment (CDPHE), the Park People, and the Colorado Alliance for Environmental Education

The Future of IES

The Tree Project

2007 will be exciting for The Tree Project, as IES launches into Phase 2, The Scientific Analysis. Our research will be turned into data gathering and analysis, distribution of results, and finally, action leading to environmental improvement in our Front Range communities. IES has excellent staff members and experienced associates and volunteers to assist with hydrologic measurements to determine trees' ability to improve water conservation and to further apply advanced computer models to gain accurate measurements. IES will also begin to turn plans for additional Phase 2 proposals into action.

Emerging Contaminants

Phase 1 of the Emerging Contaminants project will be underway in 2007. The Emerging Contaminants project team is writing proposals to state and federal governmental organizations and private foundations to gain support for the proposals that will make up Phase 1 of the project. IES has also been invited to host a session at the American Water Resource Association (AWRA) Summer Specialty Conference on Emerging Contaminants in June, 2007. IES will organize a panel of speakers to present research papers on the subject.

Funding

The IES Development Team, which consists of several associates, staff members, and interns, is expected to expand in 2007, with the development of the Sustainable Funding Plan, as well as the 3-Year Organizational Plan. The Sustainable Funding Plan includes:

Strategies

- Grants
- Major gift development
- Individuals
- Foundations
- Annual donor roster
- Income: Urban Tree Science Database

Sustainability

- Keep overhead low
- Grow slowly
- Lean business model
- Horizontal expansion
- Vertical expansion
- Replication of projects

Ideas for Social Change

- Non-monetary benefits of projects
- Training students/young Associates
- Low-income outreach/education
- Social benefits from sound science, policy
- IES process inspires organizational change

The 3-year organizational plan includes the IES approach to:

Project Selection

- Number of projects/year
- Design process
- Project execution
- Documentation process

Social Change

- The IES process: sound science leads to better policy

Tangible Results

- Established phased model for problem-solving
- Results of projects, turned into action

National/Global Scale

- IES is a neutral facilitator between government or industry leaders
- Results disseminated through the web

Sustainable Financial Support

Repeat grant funding and concrete approach to generating income for the organization.

**Institute for Environmental Solutions
Financial Report 2006**

	IES	Projects	TOTAL
	Operating		
Ordinary Income/Expense	<hr/>		
Income			
Fund Transfer Income ¹	934	14,596	15,530
Grants ²	7,500	15,000	22,500
Pending Grants ³	4,000	12,000	16,000
Unrestricted Contributions	5,300	0	5,300
Total Income	\$17,734	\$41,596	\$59,330
Expense			
DIRECT EXPENSE			
Development	224	0	224
Dues, Training, Registration fees	474	70	544
Grant Applications	14	0	14
Internet and website	738	125	863
Meeting / conference supplies/mileage	442	1,385	1,827
Office supplies	1,198	529	1,726
Parking Transportation	3	47	50
Postage, shipping	243	154	397
Taxes	0	0	0
Total DIRECT EXPENSE	\$3,336	\$2,310	\$5,645
LABOR			
Administrative expense	4,089	2,135	6,224
Grad student interns	3,192	10,829	14,021
Professional/technical staff	1,015	4,056	5,071
Research Associates	201	998	1,199
Total LABOR	\$8,498	\$18,017	\$26,515
Total Expense	\$11,834	\$20,327	\$32,160
Net Ordinary Income	\$5,900	\$21,269	\$27,170
Net Income	\$5,900	\$21,269	\$27,170

1 Fund transfer income = balance forwarded from 2005

2 Grant funding received

3 Grant funding awarded but not yet received



The Institute for Environmental Solutions Welcomes Your Support!

IES welcomes participation by all individuals and organizations that support our mission and goals.

PROFESSIONALS interested in environmental solutions may join IES as Institute Associates. Please contact us for more information.

STUDENTS at graduate school and advanced levels are invited to apply for Intern positions, listed at the IES website.

"Never doubt that a small group of thoughtful, committed citizens can change the world, indeed, it's the only thing that ever has." Margaret Mead, 1901-1978



"Facts are the air of scientists, without them, you can never fly." Linus Pauling, 1901-1994.

Contributions and grants to support the IES mission are most welcome. Financial contributions are tax-deductible . Please visit our website or call our office.

Please call, fax or email us with your questions, comments, and requests for more information. We welcome your inquiries and input.

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Keep an eye on IES projects, events, and news!

For press releases, events, publications and other news, go to the IES website, www.I4ES.org, and click on IES News.

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