

**State and Private Forestry
FY 2010 Western Competitive
Resource Allocation
Single-State Project Proposal**

Filename	
ID_TVcanopy.doc	
Administration Information	
Dollar Amount Requested:	\$300,000
Matching Share:	\$320,000

Applicant Information	
1	State Forestry Agency: Idaho Department of Lands
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Project Information				
2	Descriptive Title of Project:	Treasure Valley Air Quality Canopy Assessment		
	Names of Partnering Agencies / Organizations:	Idaho Department of Lands (IDL); Ada and Canyon Counties; Cities of Boise, Eagle, Meridian, Nampa, Kuna, Caldwell, Garden City, Middleton, and Star (Cities); Idaho Department of Environmental Quality (IDEQ); Ada County Highway District (ACHD); Nampa Highway District; Southwest Idaho RC&D (SWIRCD); NRCS; Idaho Power (IP); Boise State University (BSU); Meridian Technical Magnet School (MTMS)		
	State(s):	Idaho	Congressional Districts:	Idaho Districts 1 & 2
	Counties:	Ada and Canyon	Forest Service Regions:	Region 4

Total Leverage								
Please specify each 3 rd party contributor (partnering organizations and agencies, including other Federal) and the dollar value of each contribution. Please DO NOT show grant requested funds in this table.								
3	Contributors: (Please specify by name)	State of Idaho	Idaho Power	Cities	Highway Districts	SW Idaho RC&D	BSU and Magnet School	TOTAL
	Value of Contributions:	\$50,000	\$10,000	\$245,000	\$10,000	\$10,000	\$5,000	\$330,000

Project Budget					
	Grant Share (\$ requested)	Applicant	Non-Federal Contributors	TOTAL	
		Cash ¹	In-Kind ²		
4	Personnel / Labor:	\$30,000	\$0	\$147,000	\$177,000
	Fringe Benefits:	\$9,000	\$0	\$0	\$9,000
	Travel:	\$3,000	\$0	\$1,000	\$4,000
	Equipment:	\$10,000	\$0	\$0	\$10,000
	Supplies:	\$0	\$0	\$172,000	\$172,000
	Contractual:	\$220,728	\$0	\$0	\$220,728
	Construction:	\$0	\$0	\$0	\$ 0
	Other:	\$0	\$0	\$0	\$ 0
	Indirect Costs:	\$27,272	\$0	\$0	\$27,272
	TOTAL:	\$300,000	\$ 0	\$320,000	\$620,000

Project Duration	
5	What is the duration of this project? <input type="checkbox"/> One Year <input type="checkbox"/> Two Years <input checked="" type="checkbox"/> Three Years

National Relevance	
6	Conserve Working Forest Landscapes <input type="checkbox"/> Protect Forests From Harm <input type="checkbox"/> Enhance Public Benefits From Trees and Forests <input checked="" type="checkbox"/>

Project Description	
7	<p>Maximum 5500 Characters Including Spaces – Clearly summarize the proposed project, including goals, objectives, measurable outputs, outcomes, and how grant funds will be used towards successful completion of the project.</p> <p>The Idaho Treasure Valley (TV) includes the capital city of Boise and suburbs spread over two counties. TV is home to 600,000 people and a significant percentage of the state’s industry and business. Air quality (AQ) is one of TV’s most serious issues; areas of TV are currently rated non-attainment for particulate matter (PM) and on the edge of going non-attainment for ozone (O3). Not achieving attainment standards, especially for O3, means compromised public health, diminished economic growth (non-attainment status can limit production capabilities of existing industries and preclude siting of new industries that provide job opportunities), new and costly regulations, and a potential loss of federal highway funds.</p> <p>Nitrogen oxide (NOx) and volatile organic compounds (VOCs) react with sunlight and high temperatures to form ground-level ozone. Trees can substantially lower O3 production by blocking sunlight and lowering temperatures on surfaces that emit NOx and VOCs (asphalt, fuel tanks, buildings, etc.). Tree canopy also very effectively intercepts and filters PM. In fact, O3 and PM are the two air pollutants research has found trees are most effective at reducing.</p>

¹ ‘Cash’ is the value of any qualifying match the applicant pays for such as cash, staff time, supplies, or equipment.

² ‘In-Kind’ is the value of any qualifying match contributed by a non-federal 3rd party contributor such as donated time, supplies, or equipment.

The Idaho Department of Environmental Quality (IDEQ) notes that no single action will achieve O3 compliance with federal standards—a combination of many actions is needed. The Treasure Valley Air Quality Plan (TVAQP) lists and evaluates many actions to improve air quality, but suggests the effects of increased tree canopy are unknown due in part to a lack of information, local data and ability to quantify and measure benefits. The project partners believe inclusion of forest resources in AQ plans is a critical next step. This project will develop the data, model the impacts, establish methodologies for measuring change/success over time, and initiate action toward canopy goals.

Goals:

- 1) Utilize urban canopy to help meet federal air quality standards in TV.
- 2) Develop baseline information for measuring change over time to evaluate success.
- 3) Develop regional AQ canopy goals across all ownerships through partnerships & assessment results.
- 4) Maintain and improve healthy air quality in TV.

Scope:

- 1) Utilize two complimentary assessment tools to develop baseline information on the effects of current tree canopy on air quality, water quality, stormwater management and energy conservation over ~240 square miles of the developed and most rapidly developing areas of TV.
- 2) Using the tools and data developed, model how increased canopy can help TV meet federal air quality standards, and their effects on the other issues noted in 1) above.
- 3) Establish canopy goals targeted to improving specific air quality metrics and incorporate these into regional and local air quality plans.
- 4) Through meetings, workshops, presentations, publications and web-based tools, educate community leaders, resource managers and residents on the monetary and public health benefits of investments in tree canopy, and promote planting on all ownerships to meet air quality goals.
- 5) Initiate and implement planting projects toward meeting canopy goals.

Outcomes:

- Baseline data on canopy value
- Modeled future potential benefits for different land uses
- Methodology for measuring change over time
- Regional AQ action plans and policies that include targeted and measurable increases in tree canopy as a solution
- A comparison of two different assessment tools/methodologies
- Working knowledge and experience in urban canopy assessment and analysis for college and high school students
- Increased tree canopy and improved air quality

Two assessment tools and methodologies will be used—a GIS analysis using ArcGIS/CITYgreen software, and a field-based sampling analysis using US Forest Service i-Eco software. These tools provide complimentary information that will inform canopy and air quality decisions required for this area. A document comparing these tools in the same area will help others choose the best and most cost-effective assessment tool for specific purposes.

Output measures include a variety of CITYgreen reports that identify current and modeled canopy over different land uses (residential, commercial, etc.) and by city, establishing 200-300 permanent sample plots; an i-Eco report describing results, regional canopy goals, methodologies for measuring change (success) over time in meeting these goals, and incorporation of trees as an action in AQ plans.

Grant funds will be used to contract the GIS analysis, purchase CITYgreen software for each of the cities and counties, pay stipends for students involved in establishing and assessing survey plots and analysis work for the i-Eco assessment, project oversight and contract administration.

Partners in this project represent diverse professions and interests with a common purpose to improve air quality, economic development and public health. It will be the first time in Idaho that tree canopy is used as a quantifiable tool to help meet air quality standards.

Assessment protocols and reports will be published in hard copy, electronic and online formats, through presentations to cooperators and communities, and at professional meetings. The results of this project will be marketed to other areas in the state and region to promote the practical application of assessment technologies to quantifying ecosystem benefits of trees and forests in cities.

Program Integration	
8	<p>Maximum 1250 Characters Including Spaces</p> <p>This project integrates forestry efforts with the non-S&PF programs of environmental quality, community planning, economic development, transportation, education and energy. It supports:</p> <ul style="list-style-type: none">• IDEQ’s efforts to develop science-based, data supported, quantifiable actions that will help TV meet federal air quality (AQ) standards,• Idaho Power’s desire to lower demand-side energy use, leading to better AQ,• Transportation managers’ need to lower the impact of transportation-related sources of NOx and VOCs (asphalt, fuel evaporation, etc.) and lower stormwater runoff,• Local governments needs to address AQ regionally,• Applied education through hands-on college internships and high school apprenticeships, mentored by local professionals. <p>Getting non-traditional partners to recognize the functional value of urban forests has always been a challenge. But the critical need to address rising O3 levels in TV has created an opportunity for using this resource more effectively. The diverse project partners are excited by what this project will provide and in having another tool—one that is data-supported and multi-functional—with which to address AQ. The project integrates trees into the broad spectrum of AQ improvement actions in TV.</p>

9 Collaboration	
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Maximum 1250 Characters Including Spaces
 All partners met face-to-face to develop this proposal and each has a significant role in the project. IDL and ACHD will provide technical forestry expertise and mentor students. BSU and MTMS will provide instruction/support for student interns and apprentices in establishing permanent survey plots, and acquisition & analysis of data. IDEQ will provide air quality guidance and lead regional education and policy development. Idaho Power will provide data/information to support energy conservation analysis and co-lead regional education outreach. Cities will develop, modify and provide GIS data necessary for assessments, work interactively with contractor and students throughout the project, establish regional assessment-based canopy goals, provide education to city leaders and citizens based on results, develop actions and initiate planting projects towards meeting canopy goals. RC&D will provide local project coordination.

The TV Air Quality Plan identifies many AQ actions. The project partners have identified inclusion of forest resources in this broad agenda as the critical next step. The project team anticipates existing & new partnerships will be catalyzed by this project, leading to robust investments in urban forests.

Leverage

10 **Maximum 1250 Characters Including Spaces**
 Strong interagency and community partnerships reflected in this overall initiative will serve to leverage federal investment through effective project delivery, integrated regional policies and plans, and increased local investments. This project will also leverage the existing policy-making processes at the local, regional and state levels to facilitate implementation across multiple jurisdictions. The greater commitment and investments this project will leverage extend well beyond the grant project period. Actions to improve air quality in TV are not simply nice, but necessary. IDEQ anticipates inclusion of project recommendations in state, regional and local implementation plans for air quality protection, supporting and justifying increased investments at all levels in urban tree canopy to help meet federal air quality standards. Idaho Power’s involvement suggests opportunities for investments to enhance their comprehensive energy conservation plans. This project will support and inform the impacts of these investments not only for air quality, but for stormwater mitigation, water quality and energy conservation plans.

Meaningful Scale

11 **Maximum 1250 Characters Including Spaces**
 The TREASURE VALLEY AND REGIONAL AIR QUALITY COUNCIL ACT defines the Treasure Valley (TV) as Ada and Canyon Counties, which make up the vast majority of the local airshed. Actions to improve air quality defined in the Council’s Treasure Valley Air Quality Plan are focused in these counties, which includes about half of Idaho’s urban population. This project targets ~240 square miles of developed and rapidly developing areas within TV and encompasses the urban growth boundaries of all cities in the metropolitan area of the two counties. These are the areas where sources of VOCs and NOx are greatest, and where urban tree canopy can have the greatest impact on air quality within this airshed. Population in TV is expected to increase 70% over the next 20 years (to more than a million)—and with that will come additional emission sources and an increase in the urban heat-island effect. Focusing on these areas will maximize the investments in this project yielding the greatest impact on a landscape scale.

Sphere of Influence

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	<p>Maximum 1250 Characters Including Spaces</p> <p>In areas that exceed or are in danger of exceeding federal air quality standards, many actions are required to reduce the responsible pollutant(s). Targeted increases in tree canopy with appropriate species can be an effective tool, but often discounted (as in the current Treasure Valley Air Quality Plan), due to a lack of baseline data, quantifiable information on the benefits of canopy or a scientific method of measuring change over time. Unfortunately, few good examples of similar projects exist. While this project addresses a critical issue in a specific area, many areas across the West are facing the same problems. This project can and should be a model that can inform similar efforts. Indeed, knowledge and experience gained from a similar grant project in north Idaho is being used and expanded upon in this project, and is helping inform another project in Nevada. This project will add to the knowledge base on the practical application of these tools to address air quality and other issues. This project is designed to be replicable, and all RFPs, proposals, reports, outreach tools and documents will be available for others considering application of these tools to maximize environmental benefits of forests and trees.</p>
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Sustainability of Outcomes	
13	<p>Maximum 1250 Characters Including Spaces</p> <p>Action is required to meet federal air quality standards in TV. Completing the canopy assessment and analysis, establishing targeted canopy goals and incorporating these into action plans are the first steps in a long-term regional effort to use urban tree canopy to address air quality issues. There are very compelling public health, environmental and economic reasons to implement these plans. Many of the project partners want additional investments in urban tree canopy and recognize the inherent benefits. However, they lack data and information to monetarily justify these. This assessment provides that justification through a science-based cost/benefit analysis. The TV partners are committed to implement the developed action plans through increased investments in tree canopy on public lands—and policies, ordinances and incentives for private property. Heat islands such as parking lots and other impervious surfaces will be specifically targeted. IDEQ will continue to measure effectiveness of all actions through air quality analysis. The canopy assessment will be repeated at five to ten year intervals to measure change over time and gauge success at meeting local and regional canopy and air quality goals.</p>