

Project Name: Snake River Valley Canopy Assessment Funding Year: 2013

# Stakeholders

<u>Forest Service Region:</u> USDA Forest Service - R1 <u>Sponsoring Organization:</u> Idaho Dept. of Lands <u>State Project Contact:</u> David Stephenson | 208-666-8621 | dstephenson@idl.idaho.gov <u>Participating Organizations:</u> <u>Grantee:</u> Idaho Dept. of Lands

Project Funding
Agreement(s): 13-DG-1101000-003

**Project Design** 



### Project Purpose

The lower Idaho Snake River Valley (SRV) includes six cities and is home to a quarter million people and a significant percentage of the state's industry, agriculture and business. The Idaho Forest Action Plan (FAP) identifies air and water quality as serious issues in this Priority Landscape Area (PLA) for which strategic increases in community forest canopy can have a positive benefit. This project focuses on these cities (125 sq. miles) and implements the following two priority FAP strategies.

1) Detailed land cover/canopy mapping, completion of a canopy benefits analysis, and development of geospatial tools to prioritize canopy increases focused on addressing the above issues.

2) Strategic, on-the-ground increases in tree canopy based on this analysis as an effective way to mitigate critical issues and maximize public investments.

#### National Themes & Outcomes

#### **Conserving and Managing Working Forest Landscapes**

• Forests are actively and sustainably managed.

#### **Protect Forests from Threats**

• Threats to forest and ecosystem health are identified, managed and reduced.

#### Enhance Public Benefits from Private Forests

- Water quality and quantity is protected and enhanced.
- Air quality is improved and energy is conserved.
- The economic benefits and values of trees and forests are maintained and enhanced.
- Trees and forests are managed and restored to help mitigate and adapt to changing conditions.

#### Strategic Issues

This project addresses specific strategies within the Eastern Idaho Complex Priority Landscape Area identified in Idaho's Forest Action Plan. Air quality in and around Pocatello is non-attainment and potential water quality benefits for tree canopy is high in the larger cities and suburbs. An inventory and analysis of canopy benefits is a key strategy that will establish baseline data, and model future benefits with increases in canopy percentage to help improve air and water quality, reduce stormwater, and conserve energy in these areas. Canopy goals based on assessment data will be used to support increases in canopy to measurably improve air quality and other issues. A focus of this project will be to increase tree canopy over impervious surfaces and near buildings for energy conservation. Partners involved in this project are also identified as the key strategy stakeholders in the Forest Action Plan.



### **Collaboration & Partners**

The Idaho Community Forestry Partnership (ICFP), an organization of cities in SE Idaho working together on shared forestry issues, conceived this project to increase benefits of & support for community tree canopy in the Snake River Valley, and engaged all partners in faceto face meetings to plan this project. The city of Ammon will hire four summer horticulture students from area colleges to collect data for ~400 1/10 acre plots for an i-Eco inventory, and provide office space and equipment. Local communities and counties will provide geospatial data and GIS assistance. The Idaho State University and Brigham Young University-Idaho will provide instruction, support and credits for student internships. Utility companies will provide data and information to support energy conservation analysis and co-lead education outreach to customers. The Idaho Department of Environmental Quality will provide expertise and air guality data, and help integrate results into air guality plans. The Portneuf Watershed Partnership will assist with water quality issues and public education. The Idaho Department of Lands will administer and manage overall project, provide GIS data and support, and develop requests for proposals and administer grants and contracts. All partners will actively serve on an implementation team to review progress, work interactively with GIS contractor, establish regional assessment-based canopy goals, provide education to city leaders & citizens based on results & develop actions, complete planting projects towards meeting canopy goals, and ensure deliverables meet their specific needs.

#### Integrated Delivery

The goal of this project is to utilize strategic, targeted canopy increases to help meet air quality attainment standards, pollutant discharge permit requirements and total maximum daily loads for water quality, lower energy use and, in doing so, improve human health within these six cities. Project objectives are: 1) Utilize the latest science-based canopy assessment tools to classify land cover and quantify the value - in resource units and dollars - of tree canopy in the SRV for mitigation of carbon, ozone, particulates, water pollutants, stormwater runoff and energy use. 2) Establish baseline information for measuring progress over time. 3) Develop regional air quality canopy goals across all ownerships through partnerships and assessment results. 4) Develop dynamic prioritization tools utilizing assessment data to model where tree planting will have the greatest impact and to predict cost/benefit of investments. 5) Strategic tree planting to address identified issues based on assessment results and modeling tools to maximize public investments, and measure the increased ecosystem benefits. Proposed activities: Complete USDA Forest Service i-Tree Eco assessments/benefits analysis on 400 1/10 acre random, permanent sample plots within the 125 square mile area of interest. Complete a complementary geospatial Urban Tree Canopy assessment of land cover and tree canopy, identify all potential planting sites, summarize statistics for all data at the area of interest, city, land use and individual parcel scales. Development of dynamic GIS visualization, prioritization, and cost/benefit analysis tools utilizing data from assessments, utilities and Idaho Department of Environmental Quality to maximize public investments toward addressing critical issues. Strategic afforestation focused on improving air and water quality and energy conservation based on cost/benefit and prioritization analysis. Education targeted to community leaders and citizens on the results of this analysis and the benefits of community trees.



### Influence on Positive Change

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 and water quality issues. 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, and provides dynamic geospatial tools for planning and prioritizing future investments. The SRV partners are committed to implementing the developed action plans through increased strategic 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. The canopy assessment will be repeated at five to ten year intervals to measure progress over time and gauge success at meeting local and regional canopy goals.

## Accomplishments



**Deliverables** 

Deliverables/outputs:

•Establishment of 400 permanent 1/10 acre sample plots for current & future i-Eco assessments

•Full spectrum of i-Eco analysis reports and tables that will inform future management decisions

•Geospatial Urban Tree Canopy (UTC) assessment for the project--12 class land cover classification and locations of all potential planting sites summarized by the project, city, land use and parcel boundaries

•Baseline data developed for extent, structure, function and value of existing tree canopy w/i the project area

•Dynamic geospatial prioritization tools to analyze cost/benefit of planting locations for maximum benefit toward air quality, water quality and energy conservation

•Canopy cover goals established for various land uses, including residential, commercial and open space

•Targets established for air quality mitigation from increases in tree canopy toward goals •Strategic planting of 900 public trees w/i the project area based on prioritization tools and assessment data targeted toward maximum impact in air quality, energy and stormwater improvement

•Summary of results distributed via utility bill inserts, ICFP & IDL web sites, and in presentations to city councils, civic groups and partner agencies

Outcomes and measures of success:

•The functional benefits of tree canopy are used as a cost-effective solution to improve community air and water quality

Measure: Incorporation of afforestation/canopy cover goals in community air and water quality plans; increase in private/public investments for urban tree canopy afforestation.

•Ability to replicate assessments and measure progress over time

Measure: Future assessments completed at 5-10 year intervals

•Reduction of atmospheric particulates and other air pollutants, stormwater runoff and water pollutants

Measure: Future assessments demonstrate planting and air quality improvement targets are being achieved.



### Accomplishments to Date

FY 2014: IDL identified 300 permanent i-Tree Eco 1/10-acre sample plot locations, created high-resolution aerial photos of each plot, and provided a grant to the City of Ammon to gather data from the plots. Ammon hired four student interns (from Idaho State University, Brigham Young College-Rexburg, and the University of Idaho) who contacted the property owners on whose land the plots fell to gain access permission, and collected detailed plot data. The i-Eco assessment is complete.

FY 2016: A draft RFP has been created for the geospatial assessment of the project.

FY 2017: An RFP was finalized and released for the Geospatial Assessment. Proposals were received and a contract awarded to Plan-It Geo (PG). In addition to Pocatello, Chubbuck, Idaho Falls, Ammon and Iona, we also were able to include other urban areas within the contract. These are the greater Sandpoint area (includes Ponderay), Greater Coeur d'Alene (CDA) area (includes CDA, Post Falls, Hayden, Hayden Lake, Rathdrum, Dalton Gardens, Lake Fernan Village), Moscow and Lewiston. A thorough data inventory was completed for counties and cities engaged in this project, utility information and other data. These data were provided to PG and data use agreements signed. We held an introductory meeting between the contractor and SE Idaho partners in July, and another web-meeting held in December to demonstrate progress to date and discuss attribute information for possible tree planting locations.

FY2018: The geospatial urban tree canopy (UTC) assessment for the cities listed above were completed. An on-line decision support tool called Idaho Canopy Planner was created, and data for these cities and from nine other cities in the greater Boise area that had UTC assessments completed in 2014 were incorporated..Two workshops--one in SE and one in north Idaho summarized the data created for city staff, and demonstrated the Canopy Planner tool. A final report and five one-page area summary reports were completed. This project is complete.

#### **Deliverables in Progress**

2018: All deliverables have been completed.

### **Challenges**

Contacting property owners for the i-Eco assessment and gaining access permissions takes a lot of time, and is not always successful. Many folks have cell numbers only, and these are difficult to find. The interns worked a number of evening hours to try and catch people at home, and this helped. Overall, we were unable to gain permission to access 7.3% of the plots, and instead used backup plots delineated for this purpose.



# Impact Area



Information Last Updated 12/17/2018