

SUMMARY FACTSHEET

TRUCKEE MEADOWS (RENO-SPARKS, NV) – URBAN TREE CANOPY ASSESSMENT

UTC	Objectives	Data	Methods	Results	Goal Setting	Recommendations	Tools
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Overview: The Truckee Meadows Urban Tree Canopy (UTC) Assessment analyzed current tree canopy extent and possible planting area (PPA) in the urbanized areas of Truckee Meadows (Reno-Sparks, NV) using geographic information systems (GIS). The data were used to assess environmental and economic benefits of existing and future tree canopy scenarios. Canopy cover goals were then evaluated based on American Forest goals for the dry western U.S. and other techniques described in the UTC report. The full report provides statistical canopy results, current and projected ecosystem benefits, suggested canopy cover goals, management recommendations for reaching desired goals, and tools for implementation. This factsheet provides a condensed summary of the methods and results from the assessment.



Key Terms:

Urban Forestry is the art, science, and technology of managing trees, forests, and natural systems in and around cities, suburbs, and towns for the health and well-being of all people.

UTC is defined as the layer of leaves, branches, and stems of trees that cover the ground when viewed from above.

Ecosystem Services are the direct and indirect benefits that trees provide that we tend to take for granted because they are not assigned a dollar value.

Objectives:

- Map 5 land cover classes: trees and shrubs, all other vegetation, impervious surfaces, water and bare soil/dry vegetation.
- Map Existing, Possible, and Unsuitable UTC for entities, ward, neighborhood advisory board (NAB), commission district boundaries, generalized zoning categories and parcels.
- Calculate environmental and economic benefits of the current tree canopy and model scenarios of increasing canopy cover.
- Present potential canopy goals using the analysis in a summary report, public service announcement (PSA), factsheet, and final presentation to stakeholders in the region.
- Provide technical and non-technical tools for implementing canopy goals.



Data Types Used for UTC:

- 2011, 1-meter "leaf-on" multispectral imagery (first image below)
- Land cover classification (below)
- Assessment boundaries (parcels, wards, NABs, districts, land use)

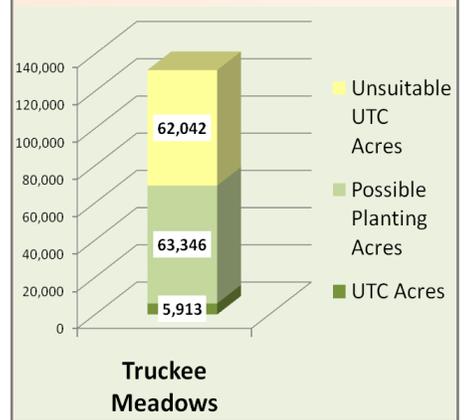
Methods:

- GIS and remote sensing processes
- Quality Assurance/Quality Control
- Calculate UTC metrics and canopy benefits using CITYgreen software
- Possible Planting Area (PPA) defined primarily as turf grass and suitable impervious areas like parking lots.



Results and Major Findings:

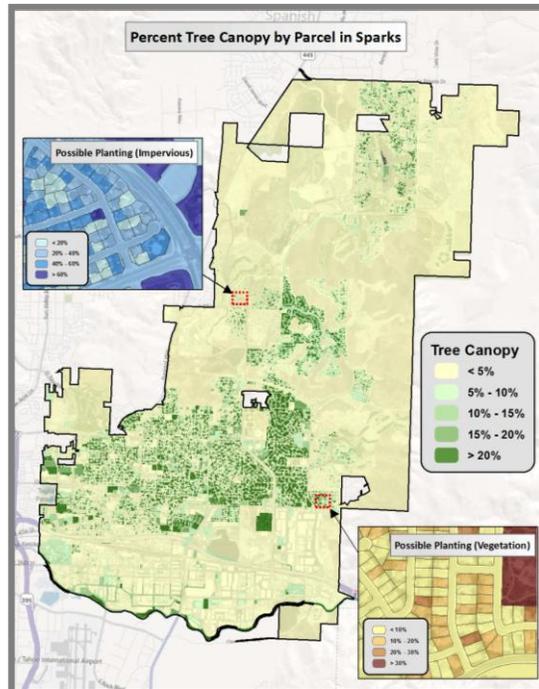
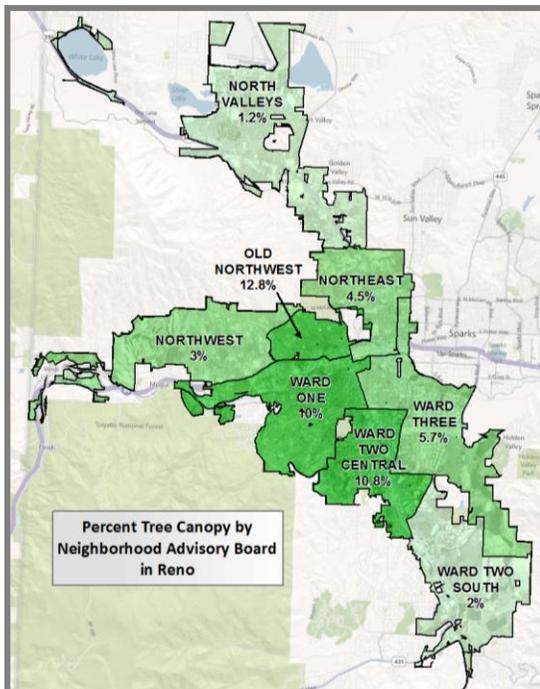
- There is 4.6% existing tree canopy cover in the Truckee Meadows with 49% PPA and 29% impervious surfaces.
- Stormwater and annual air pollution offset of the urban forest is valued at \$40.9M and \$1.5M (respectively).
- At 20% canopy cover, these values increase to \$79.9M and \$6.8M (respectively).
- 75% of all urban tree canopy is found on residential properties.
- Truckee Meadows has lower canopy cover than similar western U.S. cities.
- Reno and Sparks have 5.2% and 3.9% UTC, respectively
- University of Nevada – Reno (UNR) has 9.3% UTC (35.5 acres).



Resulting Maps and Analysis: The UTC assessment data quantifies and maps the location of existing, possible, and unsuitable UTC. Examples below illustrate ways the information can be queried and presented.

Did You Know ...

- Out of 143,749 parcels assessed, 44,417 have 0% tree cover
- 20,830 parcels have more than 20% tree cover
- 14,486 parcels have at least 50% turf grass planting area
- 8,167 parcels have at least 50% impervious planting area
- 80% of the urban tree canopy in Washoe County is on residential land
- Commercial parcels in the County have 67.5% PPA



Goal Setting: resource managers should consider setting tree canopy cover goals. AMEC applied a technique using the GIS parcels layer, UTC percent, and land use type. The table at right shows the suggested goals for Truckee Meadows.

	Land Use	UTC %	75th Percentile Goal	% Below Goal	Acres of UTC Required to Meet Goal	# of Trees Needed to Meet Goal	Total Possible Planting Acres
Truckee Meadows	Agriculture	1.9%	5.4%	-3.5%	136	5,506	1,937
	Commercial	3.1%	6.7%	-3.6%	942	30,933	9,192
	Industrial	1.2%	3.0%	-1.8%	280	10,321	4,865
	Public	2.9%	8.1%	-5.2%	480	19,113	2,953
	Residential	7.0%	18.6%	-11.6%	11,707	450,058	30,278
	Right of Way	3.3%	4.5%	-1.2%	671	11,203	5,045
	Vacant	1.3%	7.2%	-5.9%	1,387	70,282	8,355
	Total	4.6%	12.1%	-7.5%	15,603	597,416	62,625

Recommendations: The full UTC report outlines numerous recommendations to implement urban tree canopy goals in the Truckee Meadows. A few examples:

Create a regional urban forest master plan – Audit/strengthen tree ordinances – Monitor UTC every 5-10 years – Use the results for other analysis and to target tree planting projects – Explore all partnerships – Promote proper tree care

Tools: the GIS data provided through this project can be used in a number of ways as outlined in the full UTC report. For non-GIS users interested in urban forestry, 3 other tools are available: a Tree Canopy Calculator spreadsheet for seeing the effect of tree planting and tree size on canopy goals by land use type, interactive PDF maps, and Google Earth .kml files of the UTC results. These products as well as the full report and CITYgreen reports are available at <http://forestry.nv.gov/forestry-resources/urban-tree-canopy-assessment-projects/>.

Summary: With just under 5% regional tree canopy cover, it is apparent that the urban forest of the Truckee Meadows is in its infancy but that development patterns are adding trees and canopy cover to the area. Trees from new development, good tree care, and other tree planting will be needed to substantially increase canopy cover and associated ecological and economic benefits. This study provides many opportunities for education, management and planning. With residential areas comprising the majority of canopy, educating on the benefits of urban trees will be a cost-effective means to advancing urban forestry. As in other urbanized areas, trees are a fabric of the community in the Truckee Meadows and can thrive with proper planning, management, education and advocacy.



This project was awarded through the Nevada Division of Forestry in cooperation with the USDA Forest Service and funding for this project was provided by the American Recovery and Reinvestment Act of 2009. USDA is working to implement provisions of the American Recovery and Reinvestment Act of 2009 (Recovery Act) to put Americans back to work and rejuvenate the nation's economy. The Recovery Act provided USDA with nearly \$28 billion in funding. Of that, \$1.15 billion has been allocated to the Forest Service for project work in forest restoration, hazardous fuels reduction, construction and maintenance of facilities, trails, and roads, green energy projects and grants to States, tribes and private landowners.