

Key Elements To Developing An Urban Forest Management Plan



Michael-Gerold Neumann

Urban Forester

Forest Engineer, MSc

ISA Certified Arborist #WE-7917A

ISA Qualified Tree Risk Assessor, TRAQ

City of Roseville Parks Department

Roseville, CA 95747

mneumann@roseville.ca.us

Planning for the Future

ROSEVILLE URBAN FOREST MASTER PLAN

Planning for the Future of our Community Forest





Purpose of UFMP

- 25 year roadmap with directions
- Provides framework for long-term care, preservation, and expansion of the community's public trees
- Recommends objectives and action strategies to meet defined program goals
- Identifies appropriate resources to adequately manage the City's urban forest



Review Process

- Existing policies, regulations and ordinances
- Funding and maintenance levels
- Analyses of existing resources
- Stakeholder concerns & objectives
- Community input
- All City Department input
- Urban Tree Canopy analysis
- Natural Resource Analysis → I-tree report



Review Process

- Existing Tree lists
- Diversity & species distribution
- Design guidelines and BMPs
- Canopy coverage, current & historic
- Right tree in the right place
- Climate change & water conservation

Diversity ???



Not really !



Stakeholders

External Stakeholders:

- Residents
- Agencies
- Non-Profit Organizations
- Utilities

Internal Stakeholders

- All City Departments

Utility conflicts



Let's work together!

Structure & Organization of UFMP



What do we have?

Based on:

- Tree inventory
- Urban Forest Resource Analysis
- Urban Tree Canopy Analysis
- Urban Forestry staffing & other resources





Benchmark Data

Roseville's Urban Forest Benchmark Values

Community Urban Forest (Public Tree Resource)

Inventoried Trees (2014)	42,000
Open Space Trees (estimated)	80,000-100,000
Replacement Value (2010)	\$77.5 million

Species Diversity (Inventoried Trees, 2010)

Total number of unique species	160
Prevalence of top ten species	61%
Species exceeding recommended 10%	2

Benefits (Inventoried Trees, 2010)

Total Annual Benefit	\$3.2 million
Annual Per Tree Benefit	\$83
Annual Per Capita Benefit	\$29

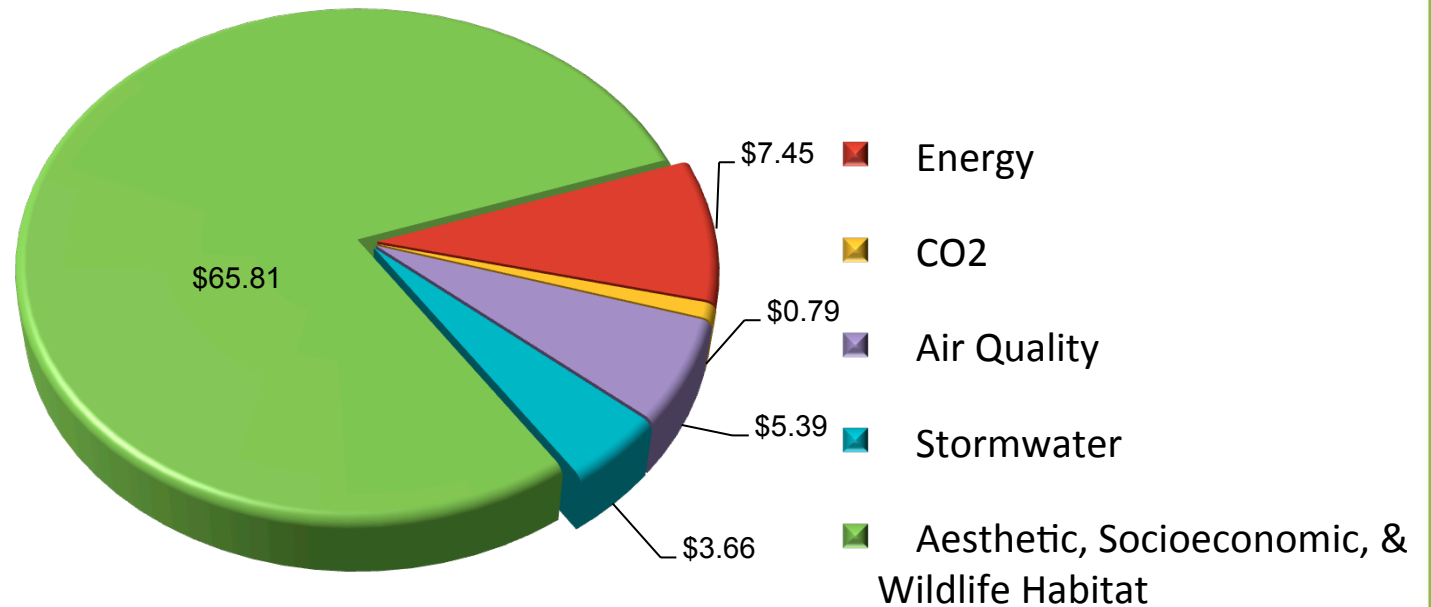
Urban Tree Canopy Cover (Public and Private, 2012)

Overall Canopy Cover	15.7%
Canopy Cover – Open Space	27.6%
Impervious Surfaces	46.2%

Canopy Benefits (Public and Private, 2012)

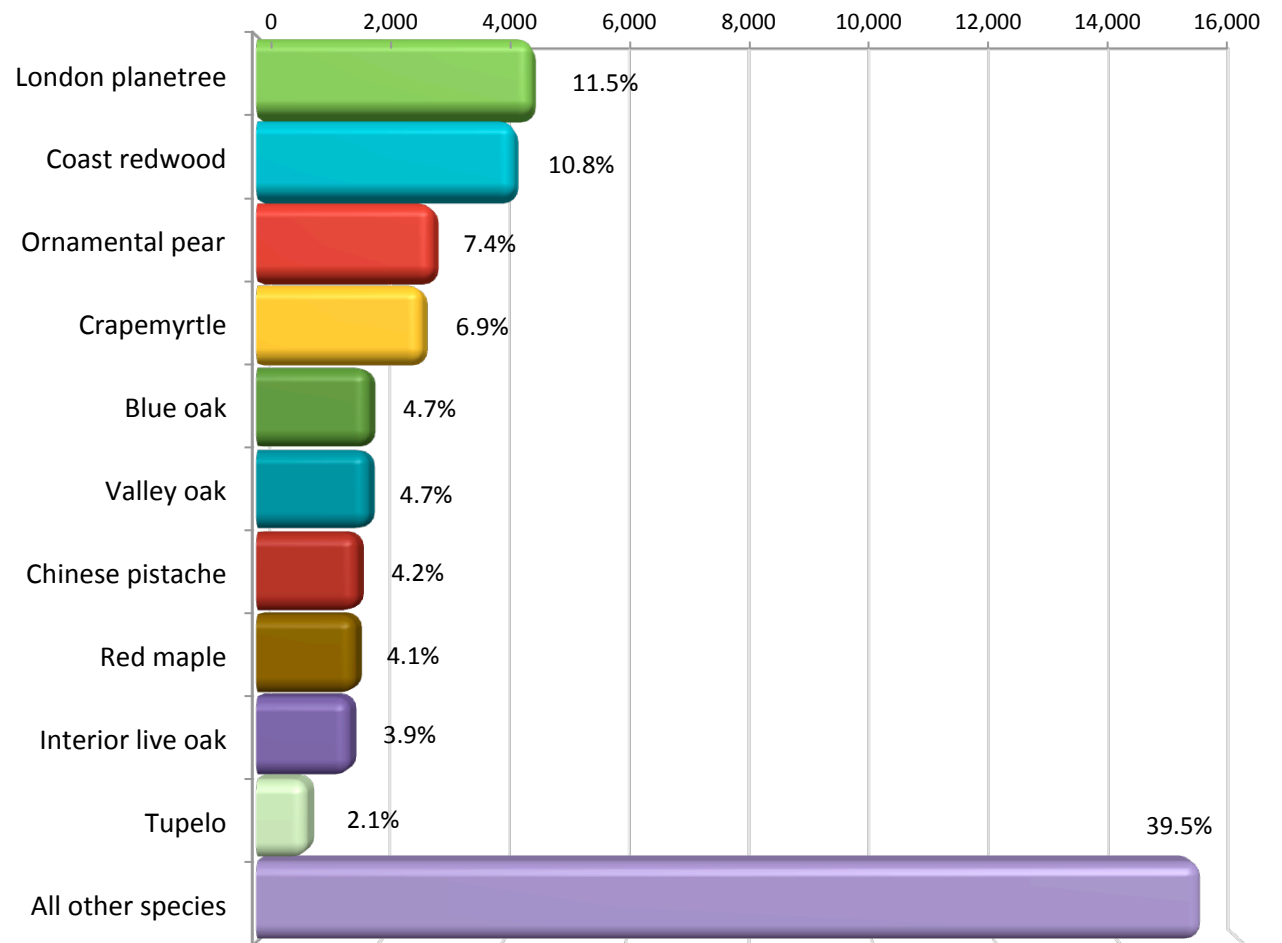
Overall carbon storage	\$7.5 million
Annual Air Quality Benefits	\$1.6 million

Urban Forest Benefits



- \$83.10 Annual average per tree benefit
- ~\$3.5 Million Citywide

Tree Species Distribution



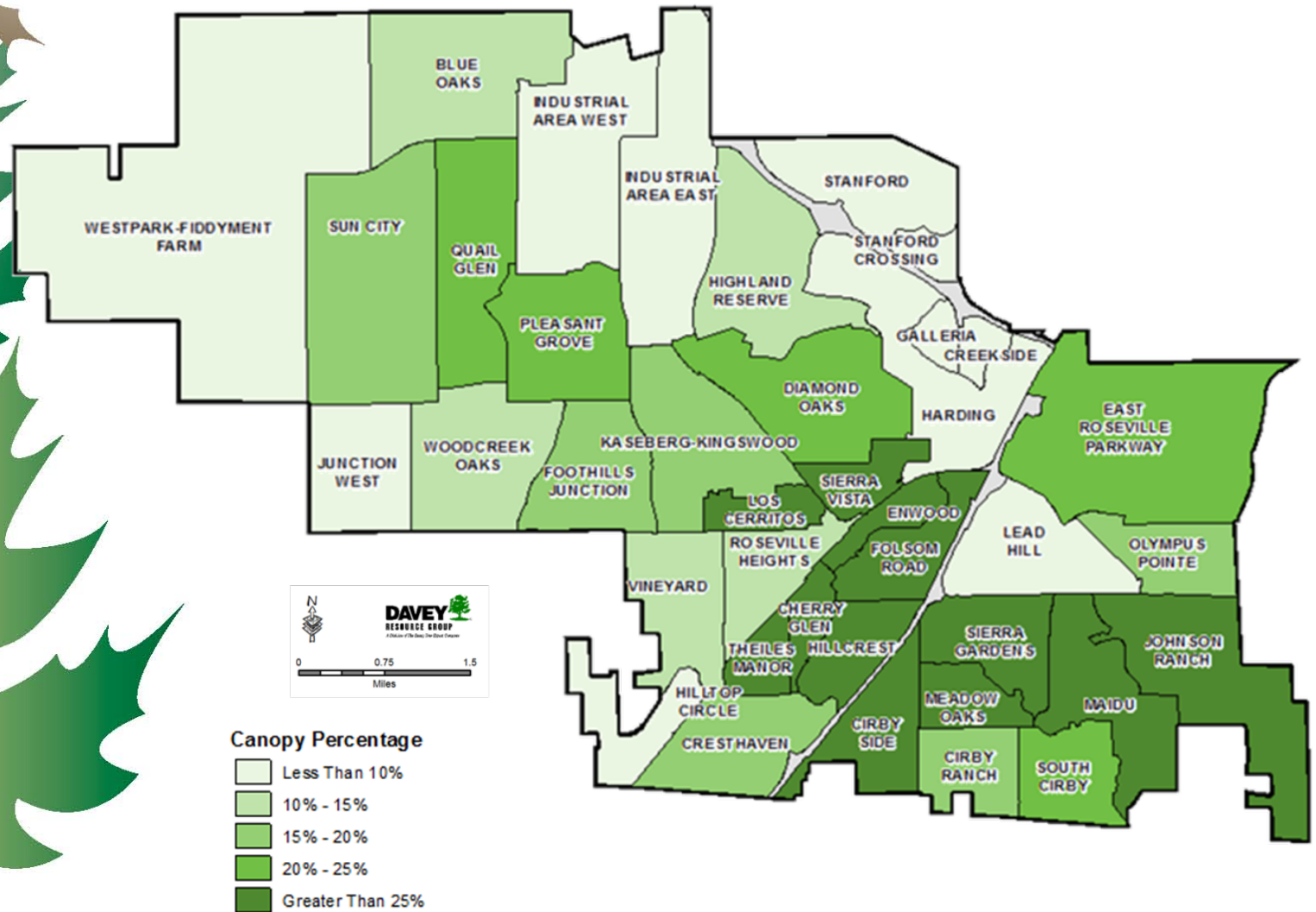


Urban Tree Canopy Analysis

UTC included:

- Trees on public & private property
- Assessment of land cover & land use
- Natural Resource Inventory
- Canopy Coverage
- Comparison of land cover & population growth

Canopy Coverage



Comparison of Population Growth & Land Cover

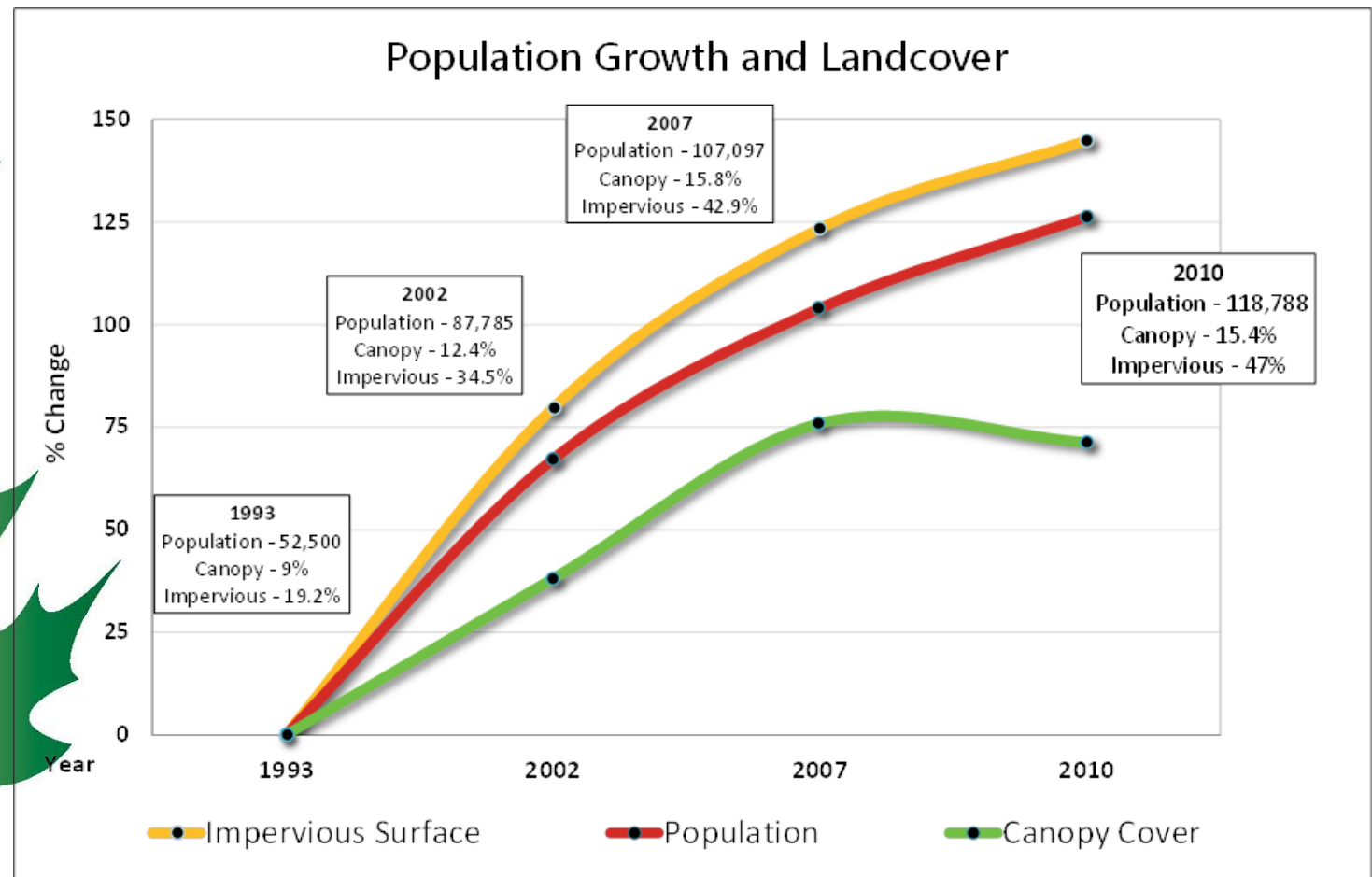



Figure 16. Population growth and landcover change since 1993



What do we want?

- Online Survey with 21 questions
- Email distribution
- Main page of City website
- Advertised twice in local newsletters
- Survey was live for 6 weeks
- Two additional community meetings
- Meetings with local and region-wide non-profit organizations
- Meetings with all City Departments

What do we want?

- 
- Healthy community through safe & healthy trees
 - Identification of adequate resources to sustainably manage the urban forest
 - Cost efficient and cost effective tree management
 - Proactive risk management and mitigation
 - Improvement of quality of life and creation of memorable experiences

How do we get there?

Mission

The mission of the Parks, Recreation & Libraries Department is:
To enhance lives and the community by providing exceptional experiences.

Guiding Principles

Grow, maintain, preserve and enhance a sustainable urban forest

Optimize the environmental, social, economic, and public health benefits of trees and canopy

Align urban forest management policy with community expectations and cost efficiency

Goals

Sustainable Urban Forest Resource

Optimize Community Planning

Optimize Funding & Identify New Opportunities

Primary Objectives

Primary Objectives

Primary Objectives

Primary Objectives

Partners

Community Engagement, Partnerships, Collaboration

How do we get there?

Grow, maintain, preserve, and enhance a sustainable urban forest

Goal: A sustainable urban forest resource

This goal is intended to improve overall forest health (structure and composition), preserve and enhance existing tree canopy, and thereby provide the foundation for sustainability of the resource and maximization of urban forest benefits over time.

Objectives in support of this goal include:

5. Develop a tree inspection policy. *continued*

Actions:

- B) Identify and prioritize plant health care needs/requirements.
- C) Identify signs or symptoms of disease, pests, and abiotic disorders, including environmental stress (e.g., water management, soil conditions, and nutrient availability).
- D) Identify obvious signs of decline and/or failing structure.
- E) Identify and assess risk and potential risk.
- F) Identify wildlife habitat and nesting cavities of endangered and/or protected species.
- G) Identify risk factors and mitigation strategies for mature, over-mature, and declining trees.
- H) Maintain inventory data (TreeKeeper®/7.7/Maximo).

Cost

Method of Measurement

Target

\$ Low

- 1) Implement tree inspections policy in daily operations to properly manage high risk trees.

2014-2016

6. Develop a tree planting and replacement plan.

Planting new trees and replacing those that are removed is critical to the sustainability of the community urban forest. Planning this process promotes a stable benefit stream and gradual replacement can reduce the impact of tree loss, especially in older neighborhoods where there is often a greater percentage of mature trees. Planning also ensures that the right tree is planted in the right place.

Actions:

- A) Use GIS mapping data to identify and prioritize planting sites and to ensure coordination with planned improvements and construction.
- B) Classify and prioritize available planting sites based on:
 - o Space and minimum planting setbacks
 - o Soil characteristics
 - o Irrigation infrastructure
 - o Landscape objectives and tree density
 - o Site constraints and existing infrastructure, including hardscape, utilities (overhead and underground), bridges, and culverts
- C) Place an emphasis on Right Tree Right Place.
 - o Reducing hardscape and utility conflicts.
 - o Matching tree species to soil and water conditions.
 - o Matching tree species to planter size and intended use.
- D) Optimize shade and environmental benefits by planting large stature trees where feasible.
- E) Identify locations, neighborhoods, and other areas where tree planting will enhance overall canopy cover.
- F) Identify underserved neighborhoods, with lower than average tree canopy, where increasing canopy can provide greater benefits to the health, social, and economic environment of residents (supports the Circulation Element, General Plan 2025).

\$ Low

- 1) Create GIS database for tree plantings and replacements and set planting priorities.
- 2) Set emphasis on right tree in the right place.
- 3) Enhance canopy cover in neighborhoods with low canopy cover as identified in UTC assessment.
- 4) Implement tree replacement ratio of 1:3.
- 5) Identify oak mitigation and reforestation areas in the open space areas.
- 6) Collaborate with nonprofit organizations and increase public outreach for plantings.

2014-2017

\$ Low (\$0-\$25,000) \$\$ Medium (\$25,000-\$50,000) \$\$\$ High (\$50,000-\$100,000) \$\$\$\$ Very High (>\$100,000)

*Targets are tentative and dependent upon available resources. Costs are based on general estimates.

[To Table of Contents](#)

How Do We Get There?



45

How do we get there?

B. Objectives, Actions, and Targets

City of Roseville Urban Forest Master Plan – Objectives, Actions, and Targets											
Goals, Objectives, and Actions*	Estimated Cost	Target (Year)									Date of Completion
		2014	2015	2016	2017	2018 5 year	2023 10 year	2028 15 year	2033 20 year	2038 25 year	
Goal: A sustainable urban forest resource											
1. Adopt most current industry standards to all contractors and in-house crews engaged in tree care operations.	\$ Low										Ongoing
2. Continue to inventory public trees.	\$\$\$ High										
A) Inventory 'official city street trees'.											
B) Inventory significant trees on open space boundaries.											
C) Inventory significant trees in proximity to trails/accessable areas.											
3. Ensure all inventoried trees are on a regular pruning and maintenance cycle.	\$\$\$\$ Very High										
A) Golf course trees											
B) City facilities/parking lots											
C) Open space											
D) Unfunded street trees											
E) 'Official city street trees'											
4. Improve management of oak woodlands in open space areas.	\$-\$\$\$ Low-High										
A) Develop management plan for 'natural areas'.											
B) Identify/delineate "natural areas"											
5. Develop a tree inspection policy.	\$ Low										
6. Develop a tree planting and replacement plan.	\$ Low										
7. Increase species diversity and plant health in the public tree resource.	\$ Low										Ongoing
Goal: Promote tree preservation and protection											
1. Revise Roseville Municipal Code – Title 8 Parks and Recreation.	\$ Low										
2. Revise and Amend Roseville Municipal Code – Title 19 Zoning.	\$ Low										
Goal: Increase Outreach and Education											
1. Develop and maintain a website for Roseville's Urban Forest.	\$ Low										
2. Develop and present workshops and seminars that increase awareness and knowledge about trees and the urban forest.	\$ Low										Ongoing
3. Design and build interpretive trails.	\$\$ Medium										
4. Partner with Roseville Electric and Environmental to deliver tree and urban forest information to residents.	\$ Low										Ongoing
*Only Actions that result in a deliverable are listed – refer to the UFRMP How Do We Get There? for details and methods of measurement.											

\$ Low (\$0-\$25,000) \$\$ Medium (\$25,000-\$50,000) \$\$\$ High (\$50,000-\$100,000) \$\$\$\$ Very High (>\$100,000)

* Only Actions that result in a deliverable are listed – refer to the UIMP How Do We Get There? for details and methods of measurement.



How are we doing?

- Success can be measured through realization & implementation of plan goals
- UFMP is an active tool that can be adjusted in response to available resources, funding and emerging opportunities
- Level of success in meeting community expectations for tree care and preservation of public tree resource



UFMP Download

ROSEVILLE URBAN FOREST MASTER PLAN

Planning for the Future of our Community Forest

Download under:

http://roseville.ca.us/parks/about_us/reports_n_plans.asp

UFMP Document:

[http://roseville.ca.us/civicax/filebank/blobdload.aspx?
BlobID=30677](http://roseville.ca.us/civicax/filebank/blobdload.aspx?BlobID=30677)



Questions



Contact Information



Michael-Gerold Neumann

Urban Forester

Forest Engineer, MSc

ISA Certified Arborist #WE-7917A

ISA Qualified Tree Risk Assessor, TRAQ

City of Roseville Parks Department

2005 Hilltop Circle

Roseville, CA 95747

916-774-5579

mneumann@roseville.ca.us