

Monitoring Plan

The UFMP is an adaptive document that should be reviewed periodically to verify that the goals and objectives are realistic and obtainable based on changes to the City’s environmental and economic conditions. The specific actions for periodic review are contained within the monitoring plan and will provide measurable outcomes to determine progress toward the completion of goals and objectives. The monitoring plan is based on the Vibrant Cities Lab, *Community Assessment and Goal-Setting Tool* which is based off the work of Clark et al. (1997) and subsequent updates and revisions by Kenney, van Wassanaer, and Satel (2011) and Leff (2016) and establishes criteria and indicators to measure urban forest sustainability. The Chico Working Group completed the monitoring plan during two meetings in the Spring of 2022 and by consensus scored the Chico urban forest program using the *Community Assessment and Goal-Setting Tool*.

The tool works by stating a desired condition of an urban forest and asking the user to rate the current level of this condition in the City using a numerical rating. It then asks for another numerical rating to indicate what the desired goal for that condition is. The low-level score of -1 reflects actions that have a negative impact. The optimal level score of 4 reflects the best possible standard. The “Total Current Score” reflects the perceived state of how a city is functioning, the “Total Goal Score” where a city wants to be, and the “Gap Score” reflects how far a city is from its desired goal (Vibrant Cities Lab 2018). The “Gap Score” the gap between the current status and a sustainable urban forest program.

Results

The table below reflects a summary of the results for each individual section of the Assessment tool. A city that has a gap score between 20 to 40 is close to achieving the goals of its urban forest program and is progressing towards a sustainable urban forest. Conversely, a gap score of 40+ indicates that a city needs to enhance the implementation of programs and policies to close the gap. While the results show a ‘Gap’ number of 57 to achieve a sustainable urban forest program, the ‘Current’ score reflects that the City is already performing many management tasks at a high level.

Section	Current	Goal	Gap
Measure Your Current Tree Canopy and Set Goals	2	4	2
Urban Forest Inventory and Assessment	5	8	3
Know What's Happening to Trees in Your Community	4	8	4
Urban Forest Characteristics	4	6	2
Engaging Peers and Residents in Process	6	14	8
Creating Essential, Effective Public/Private Partnerships	3	10	7
Resource Management: Planning	-1	8	9
Resource Management: Implementation	7	22	15
Resource Management: Monitoring and Maintenance	5	12	7
Total	35	92	57

Scores for individual sections are presented in the following tables.

Measure Your Current Tree Canopy and Set Goals

Canopy Cover: No Data, No Action	Current	Goal	Gap
Achieve desired degree of tree cover, based on potential or according to goals set for entire municipality and for each neighborhood or land use.	Good (2) The existing canopy is >75%-100% of desired.	Optimal (4) The existing canopy is >75%-100% of desired – at individual neighborhood level as well as overall municipality.	2

Urban Forest Inventory and Assessment

Inventory	Current	Goal	Gap
Current and comprehensive inventory of tree resource to guide its management, including data such as age distribution, species mix, tree condition, and risk assessment.	Good (2) Inventory guides planning, management decisions.	Optimal (4) Systematic comprehensive inventory system of entire urban forest – with information tailored to users and supported by mapping in municipality-wide GIS system. Provides for change analysis.	2
Assessment Methodology	Current	Goal	Gap
Urban forest policy and practice driven by accurate, high-resolution, and recent assessments of existing and potential canopy cover, with comprehensive goals municipality-wide and at neighborhood or smaller management level.	Better (3) Complete, detailed, and spatially explicit, high-resolution Urban Tree Canopy (UTC) assessment based on enhanced data (such as LIDAR) – accompanied by comprehensive set of goals by land use and other parameters.	Optimal (4) As described for "Better" rating – and all utilized effectively to drive urban forest and green infrastructure policy and practice municipality-wide and at neighborhood or smaller management level.	1

Know What's Happening to Trees in Your Community

Assessment of Publicly Owned Trees	Current	Goal	Gap
Current and detailed understanding of the condition and risk potential of all publicly	Good (2)	Same as current.	0

owned trees that are managed intensively (or individually).	Complete tree inventory that includes detailed tree condition ratings		
Assessment of Publicly Owned Trees	Current	Goal	Gap
Detailed understanding of the ecological structure and function of all publicly owned natural areas (such as woodlands, ravines, stream corridors, etc.), as well as usage patterns.	Fair (1) Identified only in natural area survey.	Better (3) Ecological structure and function of all natural areas assessed and documented.	2
Assessment of Trees on Private Property	Current	Goal	Gap
Understanding of extent, location, and general condition of privately owned trees across the urban forest.	Fair (1) Aerial, point-based assessment – capturing extent and location.	Optimal (4) Bottom-up sample based assessment, as well as detailed UTC analysis of entire urban forest, including private property, integrated into municipality-wide [multi-agency] GIS system. LIDAR and hyper-spectral imaging most helpful.	3

Urban Forest Characteristics

Relative Performance Index by Species	Current	Goal	Gap
Understanding the age, health and condition of publicly-owned trees, by species.	Good (2) Half of the six most common species have higher RPI scores than the average of all species in community. (>1.)	Optimal (4) All six most common species have higher RPI scores than the average of all species in community. (>1.)	2
Use of Native Vegetation	Current	Goal	Gap
Preservation and enhancement of local natural biodiversity.	Good (2) Use of native species is encouraged on a project-appropriate basis in all areas; invasive species are recognized and discouraged on public and private lands.	Same as Current.	0

Engaging Peers and Residents in Process

Align Municipal Departments	Current	Goal	Gap
Align affected municipal departments, county and regional authorities and state agencies behind common agenda.	Fair (1) Municipal departments/agencies recognize potential conflicts and reach out to urban forest managers on an ad hoc basis – and vice versa.	Good (2) Informal teams among departments and agencies communicate regularly and collaborate on a project-specific basis.	1
All Utilities Work with Municipality, Employ BMP's	Current	Goal	Gap
All utilities – above and below ground – employ best management practices and cooperate with municipality to advance goals and objectives related to urban forest issues and opportunities.	Fair (1) Utilities take actions impacting urban forest with no municipal coordination.	Optimal (4) Proactive outreach and coordination efforts by municipality and NGO partners resulting in widespread citizen involvement and structured engagement among diverse neighborhood groups.	3
Environmental Equity	Current	Goal	Gap
Ensure that the benefits of urban forests are made available to all, especially to those in greatest need of tree benefits.	Good (2) Planting and outreach targets neighborhoods with low canopy and a high need for tree benefits.	Optimal (4) Equitable planting and outreach at the neighborhood level is guided by strong resident involvement in low canopy/high need areas. Residents participate actively in identifying needs for their neighborhoods, planning, implementation and monitoring.	2
Trees Acknowledged as Vital Community Resource	Current	Goal	Gap
Stakeholders from all sectors and constituencies within municipality – private and public, commercial and nonprofit, entrepreneurs and elected officials, community groups and individual citizens – understand, appreciate, and advocate for the role and importance of the urban forest as a resource.	Good (2) Trees widely acknowledged as providing environmental, social, and economic services – resulting in some action or advocacy in support of the urban forest.	Optimal (4) Urban forest recognized as vital to the community's environmental, social, and economic well-being.	2

Creating Essential, Effective Public/Private Partnerships

Engage Large Private Landowners and Institutions	Current	Goal	Gap
Large private landholders – including school systems, universities and corporate campuses – embrace and advance municipality-wide urban forest goals and objectives by implementing specific resource management plans.	Fair (1) Municipality educates landowners, provides technical assistance, sets goals and provides incentives for managing resources in accordance with plan.	Optimal (4) Tree management plans developed with input from community, and public access to the property's forest resource.	3
All Utilities Work with Municipality, Employ BMP's	Current	Goal	Gap
All utilities – above and below ground – employ best management practices and cooperate with municipality to advance goals and objectives related to urban forest issues and opportunities.	Fair (1) Utilities take actions impacting urban forest with no municipal coordination.	Good (2) Utilities employ best management practices, recognize potential municipal conflicts, and reach out to urban forest managers on an ad hoc basis – and vice versa.	1
Green Industry Embraces Goals, High Standards	Current	Goal	Gap
Green industry works together to advance municipality-wide urban forest goals and objectives, and adheres to high professional standards.	Fair (1) Some cooperation among green industry as well as general awareness and acceptance of municipality-wide goals and objectives.	Optimal (4) Shared vision and goals and extensive committed partnerships in place. Solid adherence to high professional standards, and commitment to credentialing and continuing education.	3

Resource Management: Planning

Develop an Urban Forest Management Plan	Current	Goal	Gap
Develop and implement a comprehensive urban forest management plan for public and private property.	Low (-1) No urban forest management plan.	Optimal (4) New or recent urban forest and green infrastructure management plan which targets public and private tree planting and protection based on assessment of anticipated benefits – and assures these benefits are distributed equitably among neighborhoods.	5

Cooperative Planning with Other Municipalities	Current	Goal	Gap
Cooperation and interaction on urban forest plans among neighboring municipalities within a region, and/or with regional agencies.	Fair (1) Some neighboring municipalities and regional agencies share similar urban forest policies and plans.	Good (2) Some urban forest planning and cooperation across municipalities and regional agencies.	1
Forestry Plan Integrated Into Other Municipal Plans	Current	Goal	Gap
Forestry plan is designed to reinforce, and be reinforced through comprehensive plans, sustainability plans, park development, storm water and watershed plans, neighborhood revitalization, climate mitigation and sustainability plans, etc.	Low (-1) Urban forestry plan mentions how it could meet other municipal objectives, or inform other planning efforts.	Good (2) Once completed, urban forestry planning team works with other agencies to align current and future objectives.	3

Resource Management: Implementation

Urban Forestry Program Capacity (Applies to In-House and Contracted Staff)	Current	Goal	Gap
Maintain sufficient well-trained personnel and equipment – whether in-house or through contracted or volunteer services – to implement municipality-wide urban forest management plan.	Fair (1) Lack of staff training and/or access to adequate equipment limits effectiveness.	Good (2) Team has capacity in terms of trained staff and equipment to achieve many of the goals of the urban forest management plan.	1
Municipality-Wide Urban Forestry Funding	Current	Goal	Gap
Develop and maintain adequate funding to implement municipality-wide urban forest management plan.	Fair (1) Ad hoc funding for emergency, reactive management.	Optimal (4) Sustained, long-term funding from multiple municipal, regional and/or state agencies, along with private sources to implement a comprehensive urban forest management plan, and provide for maintenance and adaptive management as circumstances change.	3
Growing Site Suitability	Current	Goal	Gap
All publicly owned trees are selected for each site and planted in conditions that are modified as needed to ensure survival and	Good (2) Municipality-wide guidelines for the improvement of planting site conditions and	Optimal (4) All trees planted in sites with adequate soil quality and quantity, and with sufficient growing space and overall	2

maximize current and future tree benefits.	selection of suitable species.	site conditions to achieve their genetic potential and thus provide maximum ecosystem services. Where growing conditions are poor, guidance provided on how to improve soil volume, quality, other factors.	
Tree Establishment and Maintenance	Current	Goal	Gap
Comprehensive and effective tree planting and establishment program is driven by canopy cover and goals and other considerations according to plan.	Fair (1) Limited planning and post-planting care. Planting takes place on plan-identified sites. None or only fragmentary planting and maintenance protocols.	Optimal (4) Comprehensive tree establishment plan provides concrete guidance on most of the following criteria: site selection, size, age class, diversity of species, native plant choice; planting protocols [e.g. minimum soil volumes, soil conditions]; young tree care, including region appropriate irrigation requirements. Includes provisions and funding for maintenance.	3
Management of Publicly-Owned Natural Areas	Current	Goal	Gap
The ecological integrity of all publicly owned natural areas is protected and enhanced – while accommodating public use where appropriate.	Fair (1) Only reactive management to facilitate public use, e.g. hazard abatement, trail maintenance.	Optimal (4) Management plan for each publicly owned natural area focused on sustaining and, where possible, improving overall ecological integrity (i.e., structure and function) – while facilitating appropriate public use.	3
Policies That Foster Good Urban Forestry on Private Lands	Current	Goal	Gap
Because private lands comprise the majority of canopy cover for most municipalities, plans and policies should address – through rules, fees and incentives – how owners contribute to the overall health of the urban forest and the benefits it delivers.	Fair (1) Strong tree protection ordinance focused on maintaining mature trees with effective procedures.	Optimal (4) All relevant municipal policies require or incentivize adherence by private owners to standards incorporated in the plan. Incentives and sanctions applied when appropriate.	3

Resource Management: Monitoring and Maintenance

Tree Protection Policy and Enforcement	Current	Goal	Gap
The benefits derived from trees on public and private land are ensured by the enforcement of municipality-wide policies, including tree care “best management practices.”	Good (2) Policies and practices in place to protect public trees, generally enforced. As a companion to the public tree care policy, community issues a guide to aid compliance for all affected agency staffs and contractors.	Optimal (4) Integrated municipality-wide policies and practices to protect public and private trees, consistently enforced and with penalties sufficient to deter violations.	2
Monitoring	Current	Goal	Gap
Periodic, cyclical inspection of urban trees to identify health, pests and disease, growth, canopy, site conditions, and potential risks. Regular inspections guide urban forest management activities, including regular maintenance, species selection, planting sites, preventative and reactive disease and pest control.	Fair (1) Monitoring is infrequent and reactive to reported changes in tree health, site condition.	Good (2) Monitoring on a regular basis with rotating schedule for each area. Monitors are professionals or volunteers trained to collect specific data required by municipality. Multi-year data available for trend analyses.	1
Tree Risk Management	Current	Goal	Gap
Comprehensive tree risk management program fully implemented, according to ANSI A300 (Part 10) “Tree Risk Assessment” standards, and supporting industry best management practices.	Fair (1) Citizens and city staff report tree safety issues to the forestry department or manager (e.g. 3-1-1 system, online form, etc.). System tracks the time between damage report and mitigation action.	Optimal (4) Includes “better” but with TRAQ-qualified contractors on city projects. Educate tree care companies and public about importance of TRAQ qualifications.	3
Urban Wood and Green Waste Utilization	Current	Goal	Gap
Create a closed system diverting all urban wood and green waste through reuse and recycling.	Fair (1) While most green waste does not go to landfill, uses are limited to chips or mulch.	Good (2) The majority of green waste is reused or recycled – for energy, products, and other purposes beyond chips or mulch.	1