STAFF REPORT

DATE: August 31, 2021

TO: City Council

FROM: Stan Gryczko, Public Works Utilities & Operations Director
Rob Cain, Urban Forest Manager

SUBJECT: Urban Forest Management Plan Consultant Approval

Recommendation

1. Approve the selection of Davey Resource Group (DRG) as the consultant for the CAL FIRE Proposition 68 Grant Urban Forest Management Plan project; and

2. Approve Resolution authorizing the City Manager to negotiate and execute a Professional Services Agreement with Davey Resource Group, Inc. for consulting services to prepare the City's Urban Forest Management Plan.

Fiscal Impact

The total amount for the Urban Forest Management plan should not exceed $180,000. The project is part of the CAL FIRE Proposition 68 grant. Funding is through grant funds and City of Davis funds. The grant portion funds total $75,000 and the City will fund the remaining portion totaling $105,000. Of that remaining portion, $75,000 will apply as matching funds for the grant. Funding is within the operational budget for 7286 (Urban Forestry). The funding is a one-time expenditure for the Urban Forest Management Plan.

Council Goal(s)

The Urban Forest Management Plan is consistent with the following Council Goals:
- Ensure a Safe, Healthy Equitable Community
- Pursue Environmental Sustainability
- Fund, Maintain, and Improve the Infrastructure
- Enhance a Vibrant Downtown and Thriving Neighborhoods

Commission Input

The Tree Commission reviewed the Davey Resource Group (DRG) scope of work and staff-recommended consultant at the August 19, 2021 meeting. The Commission made the following motions:

1. Motion: Encourage City to seek the extension for the CAL FIRE grant and if granted use the extra time for public outreach on the plan.
   Moved by Walsh and seconded by Guenther
   Motion passed: 6-0, Guenther, Robinson, Reuter, Walsh, Cramer, and Gill-Aye
   DeWit-Absent

The City has applied for an extension being offered by CAL FIRE and anticipates approval of the extension however the grant administrator is out of the office until September 9. Staff concurs with the Commission recommendation to use some of the additional time for public outreach.

2. Motion: Recommend City Council allocate more funds to prepare the Urban Forest Management Plan.
   Moved by Guenther and seconded by Cramer
   Motion passed: 6-0, Guenther, Robinson, Reuter, Walsh, Cramer, and Gill-Aye
   DeWit-Absent

City staff is requesting authority for up to an additional $30,000 to help with public outreach for the plan. The final amount necessary will be negotiated with DRG as the scope and agreement are finalized.

3. Motion: Scope of the plan should have climate change as central issue and look at the effects on the urban forest; and how the urban forest effects climate change.
   Moved by Cramer and seconded by Guenther
   Motion passed: 6-0, Guenther, Robinson, Reuter, Walsh, Cramer, and Gill-Aye
   DeWit-Absent

The plan will include elements of this issue with the different canopy, eco-systems, and planting area analysis.

4. Motion: Engage qualified community groups to be involved in the process for community outreach.
   Moved by Reuter and seconded by Guenther
   Motion passed; 6-0, Guenther, Robinson, Reuter, Walsh, Cramer, and Gill-Aye
   DeWit-Absent

The plan includes the development of an outreach plan with community stakeholders, including Tree Davis who is a partner in the grant itself. Additionally, the outreach plan developed by the consultant will be discussed with the Tree Commission prior to finalization.

5. Motion: Eco-systems section evaluate habitat conditions currently and recommend improvements to be made.
   Moved by Guenther and seconded by Cramer
   Motion passed; 6-0, Guenther, Robinson, Reuter, Walsh, Cramer, and Gill-Aye
   DeWit-Absent

The plan will include elements of this issue with the different canopy, eco-systems, and planting area analysis.

6. Motion: Evaluation of canopy cover should include resiliency to fire risk.
   Moved by Cramer and seconded by Guenther
   Moved by Guenther and seconded by Cramer
   Motion passed; 6-0, Guenther, Robinson, Reuter, Walsh, Cramer, and Gill-Aye
   DeWit-Absent

The plan will include elements of this issue with the different canopy, eco-systems, and planting area analysis.

7. Motion: Include specific recommendations submitted by Tree Davis to the Tree Commission.
   Moved by Walsh and seconded by Reuter
   Motion passed; 3-0-1, Reuter, Walsh, Gill-Aye
   DeWit-Absent, Cramer – Abstain, Guenther and Robinson recused

The plan will include elements of this issue with the different canopy, eco-systems, and planting area analysis and the recommendations will be discussed with DRG during contract negotiations.

8. Motion: Recommend City Council engage Davey Resource Group on the Urban Forest Management Plan with the recommendations and motions made by the Tree Commission.
   Moved by Guenther and seconded by Cramer
   Motion passed; 6-0, Guenther, Robinson, Reuter, Walsh, Cramer, and Gill-Aye
   DeWit-Absent

City staff will discuss the recommendations with Davey Resource Group and modify the scope as appropriate.

The Tree Commission meeting discussion for the Urban Forest Management Plan focused on:
- The current time line for completion and the ability to complete the plan within the allotted time for the grant. Currently the draft plan is due by March of 2021 and the Commission was concerned about getting good community outreach in the short time period.
- Applying for the CAL FIRE one-year extension for the plan.
- Ensuring the development of a good community outreach plan that will engage stakeholders and community groups.

Background and Analysis
The City of Davis received a CAL-FIRE Grant utilizing Proposition 68 funds to develop an Urban Forest Management Plan (Management Plan) and to plant 1,000 new trees within the city limits. The City has been working with Tree Davis on planting the 1,000 trees, and is beginning the work of the Management Plan portion of the grant.

The Management Plan will replace the current Community Forest Management Plan created in 2002. The Management Plan will be a 40-year plan that will guide the management of Davis' community forest. The Plan will look at key areas of the Urban Forest and develop recommendations for managing, budgeting, service level matrices, and process improvements that will help improve and optimize the overall management of the community forest.

Selection of the Consultant for Management Plan
The process began with the development of the Requests for Proposals (RFP) for the Management Plan. In conjunction with Tree Davis, the City developed a Request for Proposal that was released May 17, 2021 with proposals due on June 18, 2021. The City received four proposals in response to the RFP.

The four proposals were subsequently reviewed by a staff team that ranked each proposal on criteria provided in the RFP. The evaluation criteria included:
1. Quality, completeness and responsiveness of proposal; demonstrated understanding of scope of work;
2. Related and recent Urban Forest Management Plan experience of similar scope and complexity in regions with similar issues;

3. Community engagement approach, creativity and comprehensiveness; ability to work with staff, stakeholders, local experts and commissions;
4. Expertise of the assigned project team (in-house or with sub-consultants) and previous successful working relationships; and
5. Availability and staffing to complete the project within the timeline.

Proposals were submitted by: Davey Resource Group, Dudek, PlanIT Geo, and SWA. After review, Davey Resource Group had the highest average score of the proposals received. The Davey Resource Group proposal was proposed at $149,962.00, within the City's budget for the Urban Forest Management Plan project.

The average scores for the proposals were as follows:
- Davey Resource Group   95.2
- Dudek   89.2
- PlanIT Geo   87.0
- SWA   83.0

While all four proposals demonstrated an understanding of the City's RFP and the development of management plans, the Davey proposal was thorough and informative, demonstrated an excellent understanding of the City's needs and characteristics, a high level of expertise related to urban forestry and the development of Management Plans (including plans in similar communities and funded by CAL FIRE grants), and an important focus on project outreach, even within a tight turnaround timeline. In addition, the Davey proposal included some additional items for City and Commission consideration that staff believes would benefit the project. Davey's proposed subcontractor, HELIX Environmental Planning, also has experience working in Davis and with the community.

Staff recommends selection of Davey Resource Group and subcontractor HELIX Environmental Planning for the Management Plan, based on the information and justifications included in this report.

Proposed Scope
The proposed scope from the submittal of Davey Resource Group is attached for review (Attachment 1). For summary, the tasks included in brief are:
- Project Management, including:
    - Coordination and meetings
    - Project schedule tracking and updates
    - Administration of the project
    - Development and monitoring of the work plan for the project

- An analysis of the current status of the City's Urban Forestry program, with review of all relevant materials to identify successes in meeting program goals and gaps, and areas for recommended improvements, including:
  - City policies and documents (specific documents, include, but are not limited to, those listed in the attached proposal)
  - Assessments of current program structure, function and budget of the Urban Forestry Division
  - Assessments of the current City public tree resources, including existing policies and practices for the care of City trees
  - A canopy cover analysis of private and public trees (an Urban Tree Canopy - UTC - assessment), including:
    - An i-Tree Eco analysis of City trees
    - Land cover metrics
    - Ecosystem services
    - Social equity and resilience factors
    - Canopy percent by right-of-way
    - Canopy health analysis
    - *Note: optional tools include a heat island analysis and the TreeKeeper Canopy software*
- An analysis of challenges and opportunities for incorporation into the Urban Forest Management Plan, including:
  - Summaries of City policies, planning and documents with the identification of current and future challenges and opportunities
  - Recommendations for the Urban Forestry Division structure, function and budget
  - The completed canopy cover analysis for public and private trees, and identification of canopy goals, and a priority planting index
- Management of stakeholder participation and outreach, including:
  - The development of an outreach plan, including online surveys, virtual community meetings and roaming pop-ups
  - Content for webpages, web-based outreach, and materials for media outreach
- Technical Guidance, with guidance and recommendations on the following:
  - Tree care & health
  - Tree monitoring
  - Tree protection, removal and mitigation
  - Integrating urban forestry into land use planning
  - Irrigation with recycled water and water conservation considerations
  - Tree shade and urban heat island mitigation
  - Public and private utility conflict mitigation

- o Identify any areas that might be subject to CEQA
- Final Plan Document

Further detail on the tasks and the approach recommended by Davey Resource Group is included in the attached scope.

Extension Discussion
Staff has applied for the CAL FIRE grant extension mentioned above and anticipated approval of the extension. The schedule outlined below will be modified to include additional time for outreach and other negotiated components of the scope.

Next Steps
The tentative schedule is as follows:

Anticipated Dates	Steps
August 19, 2021	Tree Commission review of Scope of Work for consultant
August 31, 2021	City Council Selection of Successful Firm
September 2021/ January 2022	Development of plan and community outreach
January 2022	Plan Draft submission
February 2022	City Review
March 2022	Final Draft Plan submission

Attachments
1. Resolution
2. Davey Resource Group Proposed Scope of Work

ATTACHMENT 1

RESOLUTION NO. 21- ----, SERIES 2021

RESOLUTION AUTHORIZING THE CITY MANAGER TO NEGOTIATE AND EXECUTE A CONSULTANT CONTRACT WITH DAVEY RESOURCE GROUP TO DEVELOP THE CAL FIRE PROPOSITION 68 GRANT-FUNDED URBAN FOREST MANAGEMENT PLAN.

WHEREAS, on June 28, 2019 the City of Davis and CAL FIRE executed a grant contract for Proposition 68 grant funds to plant 1000 trees and develop an Urban Forest Management Plan; and

WHEREAS, the City of Davis released a Request for Proposals to develop an Urban Forest Management plan on May 17, 2021; and

WHEREAS, through the application and review panel process, the firm Davey Resource was selected as the recommended consulting firm to develop the plan; and

WHEREAS, Davey Resource Group is a qualified firm with the necessary expertise and experience with successful Urban Forest Management Plans; and

WHEREAS, the Tree Commission reviewed and provided recommendations and comments on the scope of work for Davey Resource Group's proposal at the August 19, 2021 meeting; and

WHEREAS, the Tree Commission recommended, at the August 19, 2021 meeting that City Council engage with Davey Resource Group to develop the Urban Forest Management Plan.

NOW THEREFORE BE IT RESOLVED that the City Council authorizes the City Manager to negotiate and execute a consultant contract for an amount not-to-exceed $180,000 with Davey Resource Group to develop the City of Davis Urban Forest Management Plan.

BE IT FURTHER RESOLVED that all terms, conditions, and covenants of said agreement be, and the same are hereby approved, ratified, and confirmed.

PASSED AND ADOPTED by the City Council of the City of Davis on this 31ST day of August 2021 by the following vote:

AYES:

NOES:

1

ABSENT:

Gloria Partida
Mayor

ATTEST:
Zoe S. Mirabile, CMC
City Clerk

2

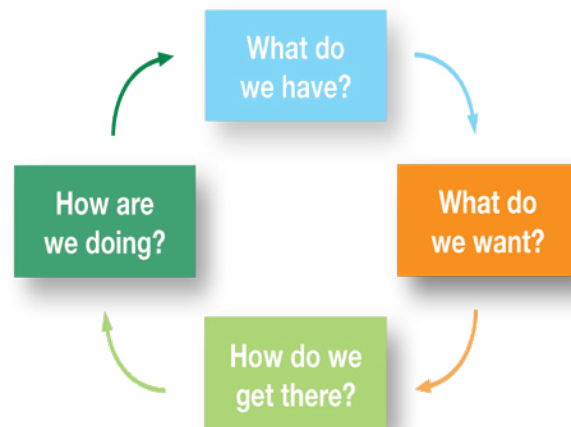# SECTION 2: PROPOSED PROJECT VISION AND APPROACH

The development of an Urban Forest Management Plan is a comprehensive exercise in collaboration, education, research, and community participation. DRG has completed plans across the United States and Canada. Each plan has a different outcome; but they all meet the needs of the community for which it was developed. We understand that by creating a plan that is collaborative among the City of Davis, community stakeholders, and DRG, a unique road map will emerge incorporating the combined experiences and knowledge of all parties. The framework and the vision of the plan will be generated through goal setting and research. Research will be both historical and current, and conducted by document examination, personnel, and community input. It will be guided by what the City of Davis team asks DRG to look for, as well as our experience in knowing what to look for. It will result in identifying key components that will lead to stronger connections and engagement of the urban forest stakeholders within the City.

Specifically, within the UFMP process DRG will:

• Update the 2002 Community Forest Management Plan

• Develop a scientific, meaningful forward-focused plan based on the needs of the City

• Provide recommendations regarding the structure and funding of the City of Davis's Urban Forestry Division.

By first determining what the City has in the way of an urban forestry program, we can move into what the City and its stakeholders want to see or envision in a program. Following up with recommendations on how the City gets to its goals, and then following up with metrics, the plan is developed in this circular management method.

Our approach to developing your UFMP is based on working with communities and entities that we have served both locally and regionally across North America. For the City of Davis, we have developed an approach to systematically address all of the specifications listed in the RFP. We also offer some "add-ons" that are not critical to the plan but may help you deliver the story of your urban forest in a more comprehensive manner to internal and external stakeholders.

Project Kickoff and Management

To begin the project, the DRG Project Manager and key members of the team will meet in person (or remotely, depending on COVID-19 protocols of both the City and DRG) with City staff for a pre-project meeting. This meeting will serve a number of purposes. The first priority will be to introduce our team and review and confirm our project scope of work and timelines. We will discuss the timeline, community engagement and potential deadlines. We will also begin the discussion of gathering information. This includes City documents that are pertinent to the plan. We will also discuss stakeholder information gathering so that we can begin that process as soon as possible. It is our intent to be well prepared going into the contract so that your staff's day-to-day duties are not interrupted by our presence. Being well prepared will also allow us to "hit the ground running" beginning our research soon after the kickoff meeting.

During the project, Davis staff and DRG will agree upon a bi-weekly schedule of calls. These project updates will have an agenda and serve as an opportunity to communicate about the plan, updates from the City, updates from DRG, challenges that we might be facing and what is coming up on the project schedule. Additionally, we will send an occasional report (most likely monthly) that details what budget has been expended (and what remains) that coordinates with the tasks that have been completed and are left to do. This is generally presented graphically.

Review Policies and Documents

Planning and developing resources for the plan is generally weighted towards the governing entity of the urban forest. However, it is important that all stakeholders become a part of the plan early. Their contributions lay the groundwork and determine the answers to the question, "What do we have?"

As part of the development of the Management Plan, DRG will review all relevant material to the Urban Forestry Program, including City policies and documents, to identify where the City is successfully meeting program goals, and where there are gaps and areas for recommended improvements. From our experience, we expect to utilize the following documents to inform the plan. However, we are not limited to these and may explore additional documents as we conduct our research.

- City of Davis Public Tree Inventory
- 2002 Community Forest Management Plan General Plan (relevant sections)
- Municipal Code (e.g., Tree Planting, Preservation and Protection Ordinance)
- City Guidelines, Specifications and Standards (e.g., Street Design, Planning Permits, Greenstreet Guidelines, Neighborhood Design Guidelines, Tree Removal/Pruning Permits, Landmark Trees, Master Tree List, Parking Lot Shade Guidelines, Street Tree Planting Requirements, City Landscape and Tree Maintenance Specifications)
- Davis Climate Action and Sustainability Plans - Potential impacts on urban forest (e.g., carbon credits, plans for landscape irrigation with recycled water, wood residue utilization, urban heat island mitigation, etc.) and opportunities for integration
- City of Davis's Tree Commission mission and function
- Economic Development plan as it relates to trees
- Davis Greenway Plan
- Davis Downtown Plan
- Others (Cal Fire, UCD, PG&E Tree Management Program. etc.)

Assess Program Structure, Function and Budget

DRG will assess the City Urban Forestry department structure, function, programs and budget Specifically we will review:

- Current staffing and program resources
- Urban Forestry Division location/staffing/roles and responsibilities (e.g., in-house, contract, Tree Davis).
- Scope of department responsibilities (planting, special projects, interdepartmental coordination emergency response, etc)
- Budget allocated per program area and current level of service for each including contracts with Tree Davis, West Coast Arborists and other contractors.

To accomplish this, we will also obtain lists and contact information for city staff, key supporters, elected officials, and other stakeholders that share an interest and/or responsibility for the urban forest. Having previously conducted many similar projects in the past, DRG has developed a methodology for this critically important task.

We develop our questions around the following items:

- Protocols and processes
- Use of available tools
- Reviewing procedures for development applications when trees are involved
- Projects and planning including Capital Improvement projects
- Ordinances that support and hinder the management and growth of the urban forest
- Conflict and cohesiveness that affects the urban forest and its stakeholders
- Gap analysis of leading urban forestry sustainability indicators
- Explore additional funding and resources available to the Urban Forestry Division

Our process includes developing a standard set of questions that will be asked during each interview. These questions do not preclude additional discussion that might be pertinent, but they do allow for consistency in research.

Recommendations

DRG will review and develop recommendations for objectives and action steps consistent with City goals and policies that provide for improvements in internal efficiencies, cost reductions, and limiting liability. Recommendations will also support and promote better communication and coordination among city departments that work within and adjacent to the urban forest (trees), decision-makers, and the community. Operational recommendations will be supported by Best Management Practices of the ISA, Tree Care Industry Association (TCIA - of which Davey is a member) as well as the American National Standards Institute (ANSI).

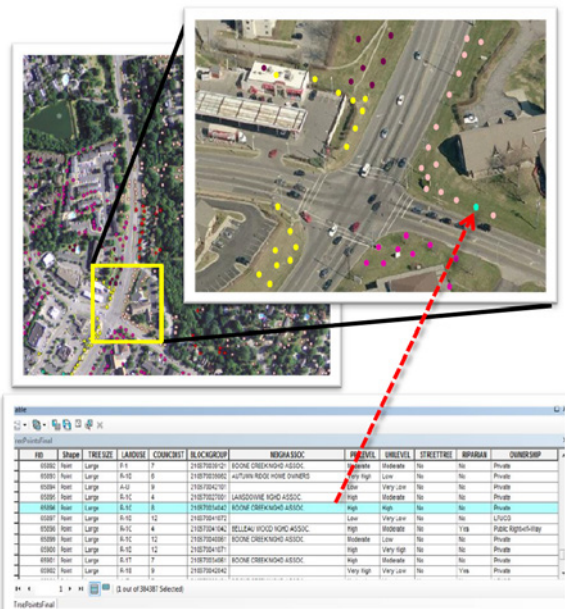**Tree Maintenance Standards**

DRG will review existing policies and practices for the care of City trees, including pruning, pruning cycles, pest management, tree planting, and tree removal. Community involvement opportunities will also be addressed. Recommendations will align City tree maintenance standards with community goals and priorities, internal stakeholder input, and City policies and Best Management Practices (BMPs) for tree care.

Tree Species List

The development and implementation of a street tree planting list and plan can direct future planting efforts by identifying species, spacing, and growth characteristics to maximize the shade canopy on streets, neighborhoods, and historic areas. Upon review of the City's tree inventory, canopy assessment analysis, and current street tree list, DRG will recommend a tree species list to reduce urban heat island effects and 1) are well adapted and long-lived 2) maximize tree biomass given each site's spatial constraints, 3) avoid over-reliance on any one species, and increase overall resilience and sustainability for the urban forest. In doing so we will identify which species have the potential to thrive and are most suitable to the regional growing zone.

Urban Tree Canopy and Land Cover Assessment

Vital information regarding urban forest structure and benefits can be developed using data from the up-to-date tree inventory. But this only provides information on the public trees. The US Forest Service estimates only 20% of the urban forest is made up of public trees. The majority of the urban forest consists of trees on private land and national and state forest lands. An Urban Tree Canopy (UTC) assessment considers all trees, both public and private, and can be obtained from the use of GIS and aerial imagery. Each of these analyses are important tools to help inform and guide the development of an UFMP. Assessment of the overall structure and function of the urban forest combines two analytical processes to achieve the best understanding of the urban forest qualities, quantities, and characteristics.

The first process utilizes i-Tree software to analyze the inventory data collected to understand the urban forest resource structure within the City. This is inclusive of ***Streets, Greenbelts, Open Space and Parks.*** The second process is a GIS analysis of the canopy cover to determine the distribution of trees across the City's communities, the benefits of the urban forest, and where planting trees will most benefit the entire community of Davis.

For the City of Davis, we recommend both an i-Tree analysis of the updated tree inventory data and an UTC Assessment. Together they will provide comprehensive analysis and benchmarks for public and private tree canopy, including the health and the composition, and will serve as a guide to which areas and species will yield optimum returns. Additional considerations follow the i-Tree Inventory assessment and UTC overview.

City Trees Inventory Assessment (i-Tree Eco)

Understanding the values that the urban forest brings to a community is an important step in developing an urban forest management plan. DRG uses i-Tree software to develop a comprehensive analysis of the composition and benefits provided by an urban forest. The i-Tree suite was developed by the United States Forest Service with the support of the International Society of Arboriculture, Society of Municipal Arborists, Arbor Day Foundation, Casey Tree, and The Davey Tree Expert Company (our parent company).

Utilized worldwide, i-Tree has provided a more scientific basis for managing trees within the urban forest for countless communities. i-Tree allows communities to understand the benefits that trees provide in simple, easy to understand ways. DRG will use i-Tree to create an expansive snapshot of the public tree inventory. It informs the condition of the urban forest allowing tree managers to develop a focus on the structure, function, and value of the trees in the community. That focus will be specifically on species composition and diversity, current condition, risk potential for invasive pests, primary environmental benefits, and management needs. i-Tree Eco will apply local hourly air pollution and meteorological data to improve the estimation of environmental benefits.

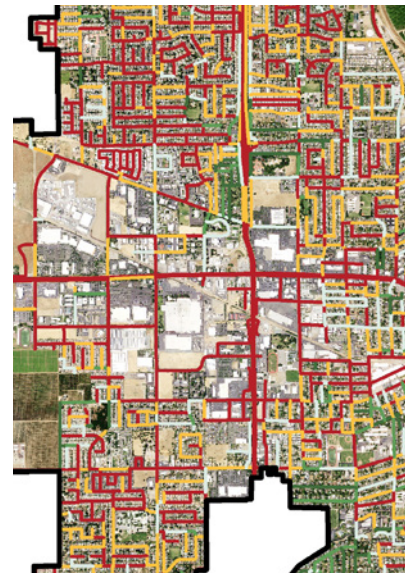**The i-Tree Eco analysis will provide the following information:**

- Urban forest composition, including species composition and diversity, condition, and age distribution.
- Hourly amount of pollution removed by the urban and community forest and associated percent air quality improvement throughout a single year. Pollution removal is calculated for ozone (O_3), sulfur dioxide (SO_2), nitrogen dioxide (NO_2), carbon monoxide (CO), and particulate matter <10 microns (PM10).
- Hourly urban and community forest volatile organic compound emissions and the relative impact of tree species on net ozone and carbon monoxide formation throughout the year.
- Total carbon stored and net carbon annually sequestered by the urban and community forest(s).
- Effects of trees on building energy use and consequent effects on carbon dioxide emissions from power plants.
- Compensatory value of the forest, as well as the value of air pollution removal and carbon storage and sequestration.
- Tree pollen allergen City index.
- Potential impact of pests and diseases such as Emerald Ash Borer and Oak Wilt.

Private and Public Trees Resources (Canopy Cover Analysis)

A UTC assessment is a tool to help urban and community forestry programs and communities better understand existing tree canopy cover and identify strategies to maximize the benefits provided by the future urban forest. For the City of Davis, DRG will obtain the 2020 National Agricultural Imagery Program (NAIP) leaf-on 1-meter aerial digital imagery acquired by the U.S. Department of Agriculture to provide the most up-to-date land cover extraction. We utilize the NAIP 4-band orthoimagery on a majority of our past and current tree canopy projects, taking advantage of the near-infrared band for more accurate extraction. DRG also plans to use 2020 Nearmap imagery for additional reference.

The following meets the Canopy Cover Analysis specifications identified in the RFP and provides specific information on each suggested category of analysis for the City of Davis:

- **Land Cover Metrics:** Area and percentages of canopy cover will be calculated for each land cover type and designation (e.g., City-wide, parks and open space, land use, zoning, improvement and redevelopment areas, neighborhood, subdivisions, watersheds, flood zones, etc.). This comparison of canopy cover with geography and land use will become a primary resource for recommendations and goals for Davis's community forest. Specific natural resource factors will be evaluated and prioritized to determine areas that provide multiple functions and benefits and should be considered a high priority for protection and preservation. In addition, this GIS layer can be used beyond the UTC Assessment in conjunction with existing GIS information to evaluate the relationship of the tree canopy to other assets and issues that may be of interest to the City.

- **Ecosystem Services:** Using the tree canopy area identified by the land cover analysis, ecosystem benefits for air quality, carbon, and stormwater will be assessed using i-Tree Software (i-Tree Canopy and i-Tree Hydro, specifically). Air quality values will consist of pounds of pollutants removed and a monetary value of those removed pollutants (carbon monoxide (CO), nitrogen dioxide (NO_2), ozone (O_3), sulfur dioxide (SO_2), and particulate matter less than 10 microns (PM_{10}). Carbon storage and sequestration values will be reported in tons and monetary value. Stormwater values will be assessed using land cover percentages. Stormwater values will be reported as gallons of stormwater runoff avoided by tree canopy and a monetary value, which is assigned by multiplying the gallons of runoff avoided by the cost to treat a gallon of stormwater/wastewater. This does not measure pollution.

- **Social Equity and Resilience factors:** DRG will provide analysis to explore the relationship between tree canopy cover and socio-demographic and economic data for the City. Census data from 2015 through 2019 will be aggregated for census tracts and/or blocks groups to determine trends and correlations with canopy cover. This data can be used by the City to prioritize tree planting and canopy goals. Typical analysis includes:

  - Canopy % vs. median household income
  - Canopy % vs. population density
  - Canopy % vs. ethnicity
  - Canopy % vs. age group
  - Canopy % vs. education
  - Canopy % vs. poverty rates/unemployment
  - Canopy % vs. building value/age

- **Canopy Percent By Right-of-Way:** Understanding Canopy Percent by Right-of-Way can help address equity factors for preservation and planting prioritization. DRG can offer macroscale qualitative analysis and recommendations that will help the City to maximize the potential of their related imagery data sets with respect to community concerns such as canopy cover within a ROW.

The map on the right features the canopy percent by ROW analysis from the Yuba City, California urban forest management plan.

- **Canopy Goal Identification:** With the results of the land cover assessment, the City will gain a clear understanding of its urban canopy resource. With input from the City's Project Manager and internal/external City stakeholders, DRG will determine and recommend a canopy goal for the City of Davis to address climate adaptation, stormwater mediation, public health advancements, and other priority concerns.

- **Priority Planting Index:** DRG will determine areas that are biophysically feasible to support trees, estimate budget implications for tree planting to increase canopy, and account for the number of trees plantable by crown size. The index provides a basis for creating planting plans and prioritizing target areas to address key considerations, including canopy equity, environmental justice, greenhouse gas emissions, heat islands, canopy connectivity, erosion, and stormwater runoff. Additional considerations for determining planting sites may include council districts, human health data, a crime reduction strategy, or other GIS-based data that is available.

Canopy Health Analysis

DRG will use satellite imagery of red and near-infrared bands to assess canopy health and areas of stress for the entire urban forest. Results of the analysis will identify tree canopy health as one of the following classes: Excellent, Very Good, Good, Fair, Poor, and Dead/Dying. The number of acres for each canopy health class will be tabulated. The results of this analysis can be used by Davis to further areas that are indicating canopy stress to find out the real cause of poor health (i.e., drought, disease, fire, dying trees, etc.).

Optional Scientific Assessment Tools

The following UTC tools and analyses were not specified in the RFP and DRG recommends them for optimal analytics and to provide the City and its stakeholders with pertinent scientific assessment guidance that will contribute to comprehensive understanding and meaningful involvement in the plan.

Heat Islands Analysis

Capturing land surface temperature data is essential to monitoring heat islands, air quality, and overall well-being for residents. To establish an understanding of how urban tree canopy affects heat island, land surface temperature analysis conducted with Landsat 8 imagery during late afternoon summer conditions can be examined to determine the highest surface temperatures observed. Multiple years can be assessed to determine how heat islands have changed over time. Theoretically, this data would be correlated with areas of tree canopy reduction, but it could also lead insight to other factors not yet known.

TreeKeeper® Canopy Software

TreeKeeper® Canopy is a popular tool to empower communities to prioritize new planting locations for the greatest benefits. The software supports the identification of priority planting areas to address one or multiple priority concerns (e.g., heat islands, stormwater, canopy equity, etc.) and project future tree canopy benefits and estimate budgets for tree planting costs. The program uses data from the inventory, census tracts, public health, and environmental factors identified in the land cover analysis, and allows you to focus your planting projects based on parameters you set. The tool is simple to use and allows the user to explore a multitude of priority planting options to determine the estimated number of trees biophysically feasible to plant within the available planting space, calculate the number of small, medium, and large-stature trees for optimal coverage, and estimate planting and maintenance costs. This web solution has proven to be an insightful and engaging planning and public education tool for municipalities. For this item we have budgeted the TreeKeeper® Canopy software build and one year of subscription/support. Additional year subscriptions are addressed in the section budget sheet. This tool allows for a 3-step system of "observe, prioritize, and plant" to optimize future tree planting.

Stakeholder Input and Public Opinion

As written documentation is only a portion of our research, public opinion concerning the extent, health and preference for alternative future investments in the City's urban forest canopy is equally essential. DRG will develop and implement a community engagement approach to:

- Present information on the state of the urban forest and the policies that govern it

- Determine public opinion concerning services provided by the City

- Engage community members to contribute to a vision of the future urban canopy

- Seek meaningful input to advance the goals of the UFMP as defined in the RFP

- Gain insight regarding public preference for alternative future investments in Davis urban forest

DRG's philosophy of engagement embodies our goals and vision for what we do every day. We believe that the first "rule of engagement" is listening. We provide advice and commentary as experts, but our clients and their constituents have opinions and ideas that are paramount to the development of an UFMP. We also believe in preparedness prior to engaging communities. This means that we will have completed most of our research prior to the start of community outreach.

Stakeholder Communication Method

DRG's facilitated stakeholder communication process will ensure that the City of Davis is providing an opportunity for a robust learning exchange among the diverse community perspectives, the City, and the project team. DRG will work with the City and its many community partners, including those identified in the CAL FIRE grant, to assist with community outreach efforts. Our communication approach will create pathways to welcome informed opinions about Davis's urban forest in a manner that is respectful of social distancing yet focused on meeting people where they are. Our outreach approach is intended to engage residents as wells as City staff, businesses, real estate professionals, builders and landscape designers and others to incorporate their expertise and experience into the UFMP

Website

DRG will build a website specific to the Davis UFMP project. The website will serve as a landing page for the UFMP development process to communicate the results of the inventory and canopy study in simple terms and provide a forum for community input. From the project website, we will conduct a UFMP survey that will include images for situational understanding, clarity, and comparison. In addition to email, messages and surveys can be constructed via text for individuals who do not have access to the internet.

DRG will also utilize the website platform for virtual community meetings. Comments made during the meetings will be transcribed and become part of the record for the Davis UFMP process.

Online Survey

DRG will create a customized online survey to gauge the public perception of the community's urban forest and the management thereof. The survey will be available on the project website and can be linked through social media accounts and PSAs. The survey questions will be based on research findings and results of the inventory as well as key considerations for the UFMP and tree protection ordinance. DRG will develop the survey questions to impart useful information and engage meaningful public commentary. DRG will develop a report at the conclusion of the survey to highlight the community interests, common findings, and feedback.

All responses are received and communicated in the same, equitable manner. Our website software also tracks the geographic area from where the response originated. With this, we can monitor community interest from across the City and document interest and comments in terms of council district, or other desirable matrices. All comments will be collected and presented to City staff, along with the summary.

Virtual Community Meetings

In collaboration with the City project team, DRG will develop the format and facilitate two virtual workshops to support the development of the UFMP and the tree protection ordinance. DRG will record the workshops and post on the project webpage so that residents can view and participate on their schedule. The webinar will include a link to the community survey so that participants can share comments outside of the live forum.

Roaming Pop-Ups

DRG will work with the City staff to determine appropriate venues/events to conduct in person community outreach across the City. These pop-ups will build community awareness and encourage additional community participation in the development of the UFMP and tree protection ordinance. DRG will facilitate two days of informal community outreach using a "roaming popup" strategy. This includes developing messages and outreach materials. DRG will work with City staff to identify popular areas where residents gather. This might be the Farmer's Market, or a popular outdoor eatery or park.

 The roaming pop-up events recognize and abide by all social distancing recommendations and requirements. During the pop-ups, friendly HELIX staff will carry a handheld tablet and engage residents in conversation regarding the urban forest. When appropriate, staff will conduct the survey verbally while typing in the respondent's answers. For people interested in reviewing the data and research, we will distribute business cards with the QR code to the project website and survey. This strategy supports community involvement while keeping social distancing. DRG will present a summary of findings from all the outreach efforts.

Deliverables

Upon reviewing City policies and documents related to the urban forest; assess the Urban Forestry Department program structure, function and budget, and engaging stakeholder and public participation and outreach as wells as conducting an analysis of the city tree inventory and conducting a UTC, DRG and Helix will provide the following deliverables:

- Summarize current and future challenges and opportunities in terms of City policies and planning.
- Recommend Urban Forestry Division Structure, Function and Budget
- Project future budget amounts needed to obtain desired levels of service by program area.
- Identify potential funding and resources available to the Urban Forestry Division.
- Report on Community outreach and provide public comment

- Recommend optimal staffing to improve departmental service and efficiency

- Recommend technology for operations, management and public involvement

- Recommend updates to the Master Tree List for climate adaptation

- Produce Canopy Cover Analysis and and analysis of the city owned trees

- Recommend and prioritize steps the City and its partners can take to address inequities in tree canopy cover among neighborhoods.

- Describe strategies to take citywide to reduce threats to tree health and promote a

- more abundant, verdant and resilient urban forest.

- Describe results of outreach to identify public preferences for alternative urban forest management and investment strategies.

Additionally DRG and HELIX will provide technical guidance for the urban forestry department and the community it serves with guidance and recommendations in regards to the state of urban forestry best practices in the following areas at a minimum:

- Tree care & health

- Tree monitoring

- Tree protection, removal and mitigation

- Integrating urban forestry into land use planning

- Irrigation with recycled water and water conservation considerations

- Tree shade and urban heat island mitigation

- Public and private utility conflict mitigation

- Identify any areas that might be subject to CEQA

Phase Three: Develop Recommendations, Focus Areas, and Plan

Analyzing the Research to Develop the Plan

Through research, data analysis, stakeholder interviews, and public engagement activities, urban forest issues, opportunities and challenges are uncovered. These help to frame and serve as the foundation of the UFMP's vision, goals and recommendations. This analysis helps answer the questions "What do we want," and "How do we get there?"

The final portion of the plan focuses on developing a monitoring and measurement component to determine effectiveness of the implementation of the UFMP. This can be a methodical and simple follow-up with assignments for review on an annual basis. Our intent is not to deliver a plan that sits on a shelf and collects dust. Rather, we see the opportunity for Davis to leverage their local and interdepartmental partnerships to create a dynamic response to addressing the needs of the urban and community forest.

Review, Feedback, and Final Deliverables

We are committed to delivering a plan that is dynamic and usable, incorporates tree management policy, and supports the vision and goals for the City of Davis. It will be formatted for a variety of uses including:

- A tool for planning for the future of the urban forest as it integrates into Davis's vision for a sustainable future.
- Assisting personnel in budgeting, staffing, and other operational aspects.
- A tool for City staff to use to coordinate on projects both internally and externally, including capital projects.
- Support planning policies both internally and externally and speak to both stakeholder groups.
- A tool that will support City Urban Forestry personnel's efforts to maintain a healthy and sustainable municipal forest.
- For use by community partners and stakeholders to identify ways to participate in improving the health and sustainability of the City's trees.

The document will be narrative text authored by two project specialists. It will incorporate sections on Program, Policy, Management, Design, Planting, Maintenance, Staffing, Public Tree Inventory, Community Participation, and Education. All of those components will lead to plans and goals that will be easily recognizable and achievable. We will incorporate all of our findings from meetings, interviews, and online surveys into the plan.

Project Review

Project review is a highly collaborative process where the City of Davis and DRG will review all plans, goals, and recommendations developed. The final project review begins with the submission of the first draft to the City. It is generally between 50% - 75% complete. Once Davis's staff provides feedback on the first draft and we reach consensus on the final elements to be included in the plan, we transition into the graphic design phase of the document.

During the plan review process, we ask that your team review the plan combining all of your comments into one document. We correct that document and give your team a second opportunity to review the plan.

Moving into the design phase, we tailor the plan utilizing a modern appearance and visually pleasing palette that includes a well-balanced combination of a narrative document, tables, images, and maps to share and convey the critical information necessary to achieve your objectives. Design and deliverable concepts can vary. We have an internal design team that support our clients projects in up-to-date design work that coordinates with your community image and culture. During the initial work on the project, we provide you with a color palette(s) and design concepts that you can choose from to tell the story of the Urban Forest Master Plan in a way that meets the needs of Davis.

Calendar of Events

The following timeline represents DRG's experience developing comprehensive CAL FIRE-funded UFMPs. We are confident we can meet the goals of the project within a 12-month period and welcome the opportunity to discuss our approach and assumptions.

Task	July	Aug	Sept	Oct	Nov	Dec	Jan	Feb	Mar 2022
Kick off meeting	X								
Project meetings	X	X	X	X	X	X	X	X	X
Other meetings/presentations		X	X	X	X	X	X	X	X
i-Tree Eco analysis and summary report	X	X							
Tree canopy/land cover assessment - GIS mapping/analysis	X	X	X						
Land cover analysis (heat islands, equity, socioeconomic and benefits)	X	X	X						
Background and operations review/assessment	X	X	X	X	X	X	X	X	
Stakeholder interviews	X	X							
Content for web page/media materials	X	X		X	X	X			
Public outreach (webinars/pop ups)				X	X				
Online survey				X	X				
Summary of outreach results/public opinion						X			
Technical Guidance - recommendations		X	X	X	X	X			
UFMP Draft 1	X	X	X	X					
City review						X			
UFMP Draft 2								X	
City review								X	
UFMP Final									X