

Application for Proposals: Urban Greening Projects

**Imperial County Community Emissions Reduction Program (CERP) for the
El Centro-Heber-Calexico Corridor**



The Imperial Community Emissions Reduction Program (CERP) for the El Centro-Heber-Calexico Corridor and associated emission and exposure reduction projects are part of California Climate Investments, a statewide initiative that puts billions of Cap-and-Trade dollars to work reducing greenhouse gas emissions, strengthening the economy, and improving public health and the environment — particularly in disadvantaged communities.

Urban Greening Project Proposal Application

Date	_____
Project	_____ Please give your project a brief title
Beneficiary	_____ Who benefits from this project? (ex. City of El Centro)

Applicant Contact Information

Applicant Name	_____
Applicant Telephone	_____
Applicant E-mail	_____
Other	_____

Project Summary

Please use this section to briefly describe your project. Indicate in this section how your project will meet environmental goals or have an environmental benefit.

Scope of Work

Identify the proposed project location and describe the current site conditions. Please note the extent of public access to the proposed project site

i.e., Provide address or cross-streets, and describe surrounding area. Also note legal owners of each parcel within the project footprint. Please attach photographs of the project site and a representation of the project plan area (i.e., site plan). For projects with vegetative barriers, please include planned barrier height and thickness.

Describe the proposed greenery

Please include the quantity of each species of plant or tree to be planted. Please also note environmental benefits of the selected species (e.g., if the species is native or drought-resistant), if possible.

Area of green space to be created or enhanced (acres or square footage) _____

Describe the proposed irrigation systems

Please note the type of irrigation systems (e.g., drip, overhead spray)

Scope of Work, Continued

Describe any possible project limits such as parking, hours of operation, available staffing, user fees, seasonal restrictions, or other ecological considerations.

Provide a list of sensitive receptors (i.e., schools, daycares, residences) within 1,000 feet of the project

Name of Location	Distance from Project

Provide an estimated timeline for project implementation, assuming the project is notified of grant approval within 60 days of submittal of this application.

Please include preliminary design, environmental documentation, permitting, and long-term operation and maintenance commitments as steps in this timeline.

Date	Action

Describe the measures that will be utilized to assure completion of the project within the indicated time

Identify the key individuals responsible for project implementation and their roles.

Name	Title/Position	Project Role

Project Funding

Describe the estimated costs of the project:

- Supplies and Materials _____
- Labor and Construction _____
- Contracted Services _____
- Signs and Interpretive Aids _____
- Non-Construction Costs _____
- Contingency Costs _____

What is the requested funding amount to be used toward eligible project costs? _____

How much additional funding has been secured for this project? Amount: _____ Source: _____

Emissions Reductions

Please attach a completed version of the California Natural Resources Agency (CNRA) Draft Urban Greening Benefits Calculator Tool to this application.

Project Commitment

The applicant commits to the following requirements:

- Applicant is the owner of the Urban Greening project area, or has authority to construct and maintain the project on the property
- Applicant will maintain the green space during the entire contract period, 10 years
- Applicant will make the project available for inspection if requested by ICAPCD and/or CARB staff during the entire contract period, 10 years
- Applicant will contact the Imperial County Agricultural Commissioner's Office before obtaining any plant material originating from outside Imperial County
- Applicant will ensure that trees are purchased, planted, and maintained to the specifications provided in Appendix H of CAL FIRE's Urban and Community Forestry Grant Guidelines.¹
- Where feasible, projects shall provide public access
- All property taxes are current as of the time of this application
- Applicant will obtain any permits required to do the project
- Applicant or their sponsor has financial capacity to complete, operate, and maintain the project
- Any funds required from other sources will be available on the time frame needed to carry out the project
- Photo documentation will be provided project upon completion
- Photo documentation or tree condition report will be provided annually to demonstrate ongoing project maintenance
- Plant species selected maximize greenhouse gas reductions and minimize emissions of biogenic volatile organic compounds (BVOC) and allergenic pollen, where possible
- Projects incorporate recommendations in the anti-displacement resources provided, as applicable

Date _____

Signature _____

¹ Appendix H, CAL FIRE Urban and Community Forestry Grant Guidelines. Available: https://www.fire.ca.gov/media/9653/cal-fire-ucf-cci-2019-20_grant-guidelines_final.pdf#page=54. Accessed: January 2021.

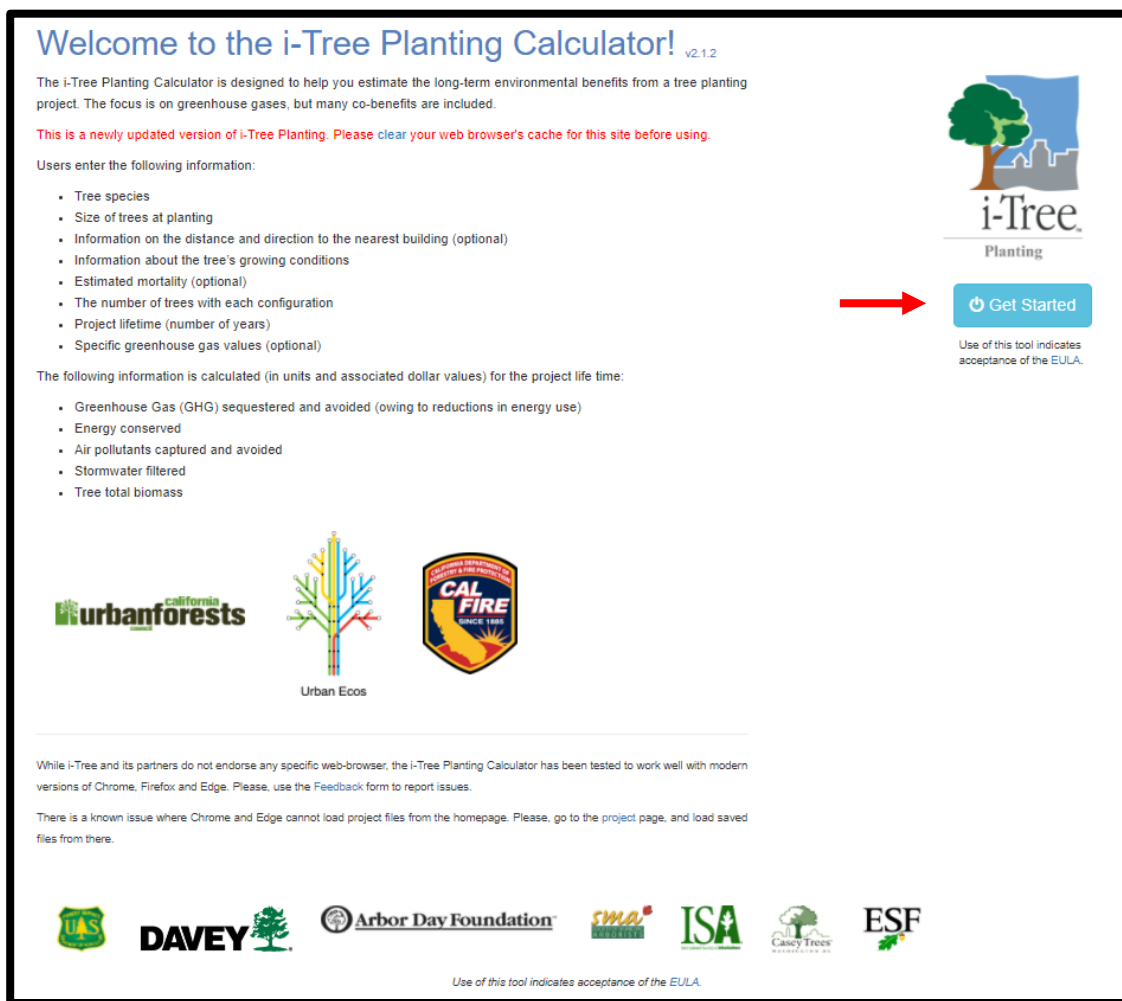
APPENDIX B URBAN GREENING TOOLS – USER GUIDES

- B-1. i-Tree Planting Calculator User Guide
- B-2. WUCOLS IV Tool User Guide
- B-3. DWR Water Budget Workbook User Guide
- B-4. CNRA Benefits Calculator Tool User Guide

B-1. i-Tree Planting Calculator User Guide

The tool **i-Tree Planting** should be used in order to help estimate the tree carbon storage, energy savings, and pollution reduction due to each group of trees to be planted. This tool can be found at [Home - i-Tree Planting Calculator \(planting.itreetools.org\)](http://planting.itreetools.org).

Step One – Open Tool. Once at the website, click “Get Started” on the right of the screen to access the tool, as shown below:



Step Two – Specify Project Location. Once in the tool, enter the project location (state, county, then city) as prompted from the three dropdown menus. Click next to continue.

Step Three – Specify Project Parameters. On the Project Parameters page, the Electricity Emissions Factor, Fuel Emissions Factor, Years for the Project, and Tree Mortality over Project Lifetime are all adjustable. Per CNRA guidelines, the Electricity Emissions Factor should be 227.9 kg CO₂e/MWH and the Fuel Emissions Factor should be entered as 53.1 kg CO₂e/MMBtu. The Years for the Project value should represent the total years of tree growth 40 years from the project start date. For example, for trees planted in the first year of the project, enter “40.” For trees planted in the second year, enter “39,” and so on. The Urban Greening Benefits Calculator Tool will account for the Tree Mortality over the Project Lifetime, so please enter zero for this field. See the following screenshot for an example of what this page may look like for a project within Imperial County:

Location Parameters **Trees** Report

Project Parameters

Configure the local parameters for the project.

Electricity Emissions Factor

227.9 ←

This field is required.

Units

pounds CO₂ equivalent/MWh kilograms CO₂ equivalent/MWh

Fuel Emissions Factor

53.1 ←

This field is required.

Units

pounds CO₂ equivalent/MMBtu kilograms CO₂ equivalent/MMBtu

Years for the Project (1 thru 99)

40 ←

Tree Mortality over Project Lifetime, as an estimated percentage (Optional, 0 thru 100)

0 ←

Next →

After making these inputs, hit next again to progress to the next tab, "Tree Planting Configurations."

Step Four – Specify Units for Tree Planting Configurations. At the top of the Tree Planting Configurations page, the units can be adjusted between English and Metric, and it can be selected whether the tree species will be listed using their common or scientific names.

Step Five – Enter Tree Planting Configuration Information. After the units and nomenclature items are selected (under Step Four), the following must be entered:

- Tree Group Information
 - Species of tree (*select from dropdown*)
 - Diameter at breast height (DBH) at time of planting
- Building Information
 - Distance to nearest building (*select from dropdown*)
 - Direction from nearest building (*select from the dropdown the cardinal direction [e.g., North, South, etc.] in which the tree is located when standing at the building*)
 - Age of building (*select from dropdown*)
 - Climate controls within the nearest building (*select from dropdown*)
- Tree Details
 - Tree condition (*select from dropdown*)
 - Exposure to sunlight (*select from dropdown*)
 - Number of trees to be planted

This information must be entered for each different group of trees that will be planted. A new group is required whenever any of the above parameters are different for a set of trees. To add a new group of trees, hit the plus sign at the far left of the table. To remove a group, click the X at the left of the row that needs to be removed.

Tree Planting Configurations
ATTENTION: Please, limit projects to batches of 100 or less tree groups.
 Enter the tree groups for the project.

Units
 English (feet & inches) Metric (meters & cm)

Nomenclature
 Common Name Scientific Name

Tree Group Information				Building Information			Tree Details			
	Group Number	Species	DBH in inches	Distance to Nearest in feet	Tree is _____ of Building	Vintage	Climate Controls	Condition	Exposure to Sunlight	Number of Trees
<input type="checkbox"/>	1	Acacia	8	0-19	South (180°)	Built 1950 - 1980	A/C Only	Good	Full Sun	10
<input type="checkbox"/>	2	Cottonwood	14	20-39	Northeast (45°)	Built after 1980	Heat & A/C	Excellent	Full Sun	5

Add new rows here →

Delete rows here →

Adjust all values in these cells as needed

An example of this completed tab with two groups of trees is shown below:

Step Six – Generate Report. After inputting this information, hit next again. This will generate the final report from i-Tree Planting.

The report has four sections within the webtool:

- “CO2” shows the pounds of CO2 avoided and sequestered and the resultant cost savings.
- “Energy” shows the electricity and other fuel savings and resultant cost savings.
- “Eco” shows the total tree biomass, rainfall interception, and the avoided runoff in gallons and resultant cost savings.
- “Air Pollution” shows the total mass of several key air pollutants that was either avoided (via deposition and dispersion) or removed (via absorption) because of the project.

In order to see values from all four of these tabs at once, proceed to Step Seven – Export Report.

Step Seven – Export Report.

Planting Report

Print

NOTE: Printing is recommended as the "landscape" orientation or at a reduced scale.

Project Report - i-Tree Planting Calculator v2.1.2

Location: El Centro, California 92243
 Electricity Emissions Factor: 252.40 kilograms CO2 equivalent/MWh
 Fuel Emissions Factor: 52.00 kilograms CO2 equivalent/MMBtu
 Lifetime: 40 years
 Tree Mortality: 3%

All amounts in the tables are for the full lifetime of the project.

Units

English (pounds & tons; kWh & MMBtu; gallons)
 Metric (kilograms & metric tons; kWh & MMBtu; cubic meters)

Copy
Export
CO₂
Energy
Eco
Air Pollution

Search:

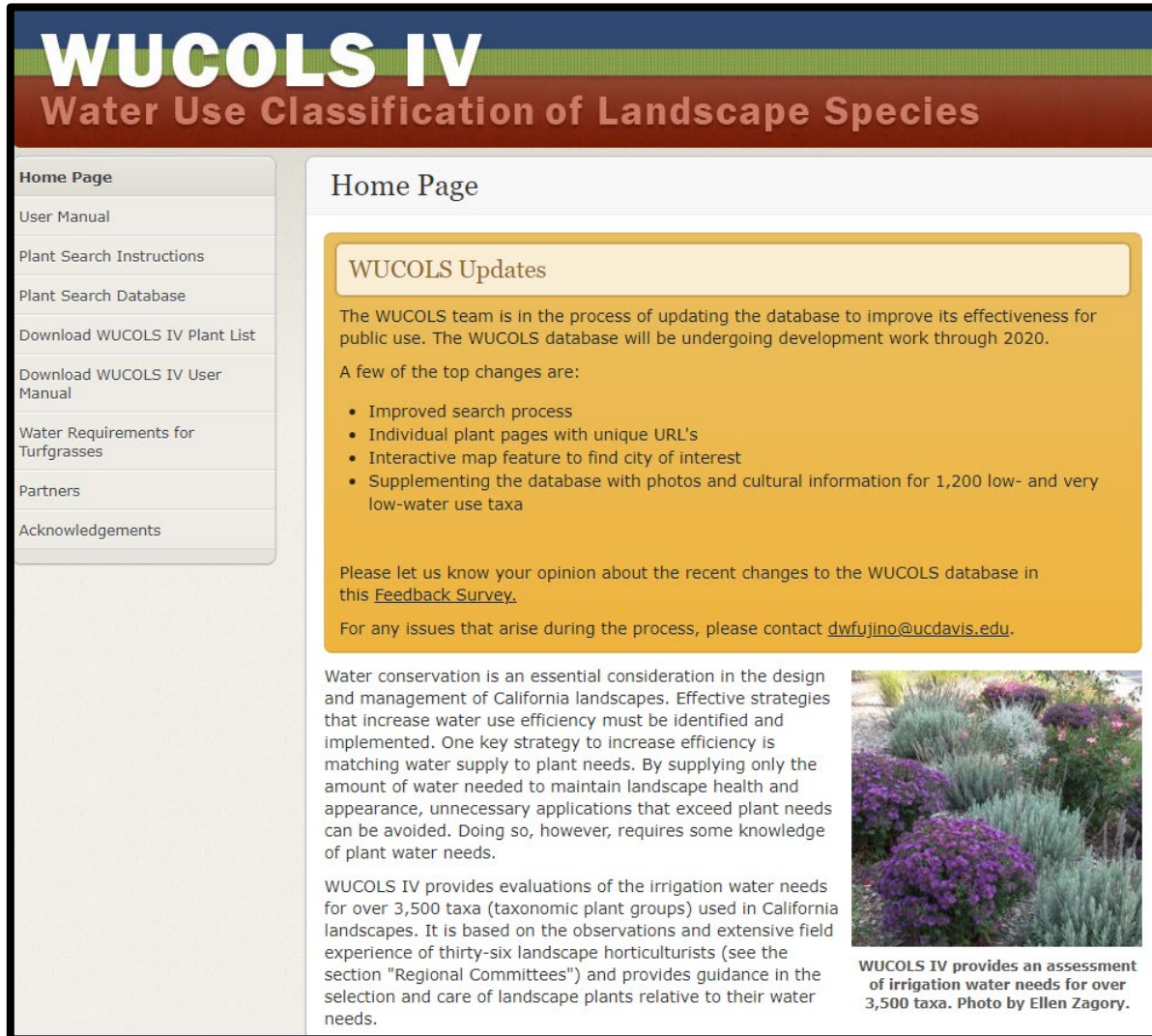
Location		CO ₂ Benefits			
Group Identifier	Tree Group Characteristics	CO ₂ Avoided (pounds)	CO ₂ Avoided (\$)	CO ₂ Sequestered (pounds)	CO ₂ Sequestered (\$)
1	<ul style="list-style-type: none"> (10.0) Acacia (Acacia species) at 8.0 inches <u>DBH</u>. Planted 0-19 feet and south (180°) of buildings that were built 1950-1980 with only A/C. Trees are in good condition and planted in full sun. 	64,299.5	\$1,495.41	1,757.6	\$40.88
2	<ul style="list-style-type: none"> (5.0) Cottonwood (Populus species) at 14.000000000000002 inches <u>DBH</u>. Planted 20-39 feet and northeast (45°) of buildings that were built post-1980 with heat and A/C. Trees are in excellent condition and planted in full sun. 	34,798.9	\$809.31	84,780.8	\$1,971.74

Hitting export will generate an Excel spreadsheet with all relevant values included. These values will need to be imported into tab "Tree Planting – ITP" in the CNRA Calculator Tool.

B-2. Water Use Classification of Landscape Species (WUCOLS IV) Tool User Guide

The University of California Agriculture and Natural Resources (UC ANR) **WUCOLS** tool should be used in conjunction with the DWR Water Budget Workbook in order to estimate the amount of water and type of irrigation that this project will require. This tool is available here: <https://ucanr.edu/sites/WUCOLS/>.

Step One – Open Plant Search Database. From the tool home page, click “Plant Search Database” to enter the tool itself, as shown below:



WUCOLS IV
Water Use Classification of Landscape Species

Home Page

- User Manual
- Plant Search Instructions
- Plant Search Database
- Download WUCOLS IV Plant List
- Download WUCOLS IV User Manual
- Water Requirements for Turfgrasses
- Partners
- Acknowledgements

WUCOLS Updates

The WUCOLS team is in the process of updating the database to improve its effectiveness for public use. The WUCOLS database will be undergoing development work through 2020.

A few of the top changes are:


- Improved search process
- Individual plant pages with unique URL's
- Interactive map feature to find city of interest
- Supplementing the database with photos and cultural information for 1,200 low- and very low-water use taxa

Please let us know your opinion about the recent changes to the WUCOLS database in this [Feedback Survey](#).

For any issues that arise during the process, please contact dwfujino@ucdavis.edu.

Water conservation is an essential consideration in the design and management of California landscapes. Effective strategies that increase water use efficiency must be identified and implemented. One key strategy to increase efficiency is matching water supply to plant needs. By supplying only the amount of water needed to maintain landscape health and appearance, unnecessary applications that exceed plant needs can be avoided. Doing so, however, requires some knowledge of plant water needs.

WUCOLS IV provides evaluations of the irrigation water needs for over 3,500 taxa (taxonomic plant groups) used in California landscapes. It is based on the observations and extensive field experience of thirty-six landscape horticulturists (see the section "Regional Committees") and provides guidance in the selection and care of landscape plants relative to their water needs.



WUCOLS IV provides an assessment of irrigation water needs for over 3,500 taxa. Photo by Ellen Zagory.

Clicking that link will open the Plant Search Database.

Step Two – Enter City Name. Enter the city in which the proposed project will be located using the drop-down menu or “Find a city on the map” option. Note that El Centro and Calexico are the only options within the corridor. Heber is not an available option, but all of Imperial County is located within the same region, classified as “Low Desert” in this tool. Therefore, if the project is specifically in Heber or is otherwise not located within El Centro or Calexico, choose either El Centro or Calexico. These cities will be representative of the entire Corridor.

Step Three – Choose Plant Type. Once the city name is entered, there are two options. If the types of plant and greenery for the project have already been determined, use the “Plant Name” search box to choose the specific plants and greenery. If not, then the general Plant Type can be chosen from the list on the right, and the water usage can be chosen from the checklist on the left. In the example below, the user selected California native trees that require very low or low water usage within Calexico:

The screenshot shows the WUCOLS IV Plant Search Database interface. At the top, the title "WUCOLS IV Water Use Classification of Landscape Species" is displayed in a blue and green header. Below the title, the section "Plant Search Database" is visible. A text box explains that users can search by name or by plant type and water use. A button labeled "See WUCOLS List for All Regions" is located in the top right. The "City" section has a dropdown menu with "Calexico" selected and a "Find a city on the map" button. The "Plant Name" section has a text input field labeled "Common Name or Botanical Name". The "Water Use" section has a checklist with "Very Low" and "Low" selected. The "Plant Type" section has a checklist with "T (Tree)" and "N (California Native)" selected. A link "Looking for Turf Grass?" is present next to the "G (Ornamental Grass)" option. A green "Search Plants" button is at the bottom left.

Step Four – Search Plants. After the options have been set, click “Search Plants” on the bottom left of the screen in order to view the results. The top results of the plant type selected in Step Three appear alphabetically as shown on the following page:

WUCOLS IV
 Water Use Classification of Landscape Species

Plant Search Database



City: Calexico Start Over Search Again Export List

Region: Low Desert

Legend: Plant Types

Legend: Categories of Water Needs

Search Results: 128

Type	Photo	Botanical Name	Common Name	Water Use	Export
S T	N/A	Acacia abyssinica	Abyssinian acacia	Low	<input type="checkbox"/>
S T	N/A	Acacia berlandieri	guajillo	Low	<input type="checkbox"/>
S T	N/A	Acacia constricta	whitethorn acacia	Low	<input type="checkbox"/>
S T		Acacia craspedocarpa	leatherleaf acacia	Low	<input type="checkbox"/>
S T N		Acacia greggii	catclaw acacia	Low	<input type="checkbox"/>

Step Five – Choose Plant Type. Once an appropriate plant has been identified, or once the type of plant that has already been chosen for this project is found, click on its name. An example for the first search result, *Acacia abyssinica*, is shown below:

WUCOLS IV
 Water Use Classification of Landscape Species

Plant Search Database

City: Calexico Start Over Search Again Export List

Region: Low Desert

Legend: Plant Types

Legend: Categories of Water Needs

Search Results: 128

Type	Photo	Botanical Name	Common Name	Water Use	Export
S T	N/A	Acacia abyssinica	Abyssinian acacia	Low	<input type="checkbox"/>
S T	N/A	Acacia berlandieri	guajillo	Low	<input type="checkbox"/>
S T	N/A	Acacia constricta	whitethorn acacia	Low	<input type="checkbox"/>
S T		Acacia craspedocarpa	leatherleaf acacia	Low	<input type="checkbox"/>
S T N		Acacia greggii	catclaw acacia	Low	<input type="checkbox"/>

Step Six – Obtain Evapotranspiration Rate. On the next page, click on the text “Legend: Categories of Water Needs” in order to display the evapotranspiration rates for the chosen plant. Look for the value that matches the water usage classification for that plant, which should be highlighted in blue. An example for the first search result, *Acacia abyssinica*, is shown on the following page:

WUCOLS IV

Water Use Classification of Landscape Species

Plant Search Database

Acacia abyssinica Start Over

Botanical Name	<i>Acacia abyssinica</i>
Common Name	Abyssinian acacia
Plant Type(s)	Shrub (S) Tree (T)

Water usage

Region 1 North Central Coastal	Inappropriate
Region 2 Central Valley	Unknown
Region 3 South Coastal	Inappropriate
Region 4 South Inland Valley	Unknown
Region 5 High and Intermediate Desert	Inappropriate
Region 6 Low Desert	Low

Use this classification to select the correct ET₀ percentage, below

Clear region selection

Click here to expand

▼ Legend: Plant Types

▲ Legend: Categories of Water Needs

Category	Abbreviation	Percentage of ET ₀
Very Low	VL	< 10
Low	LO	10-30
Moderate / Medium	M	40-60
High	H	70-90
Unknown	U	N/A
Not Appropriate for this Region	NA	N/A

The Evapotranspiration Rate, ET₀, is shown in the "Percentage of ET₀" column. Take note of the average value from the column "Percentage of ET₀," shown above. In this case, the average would be 20%.

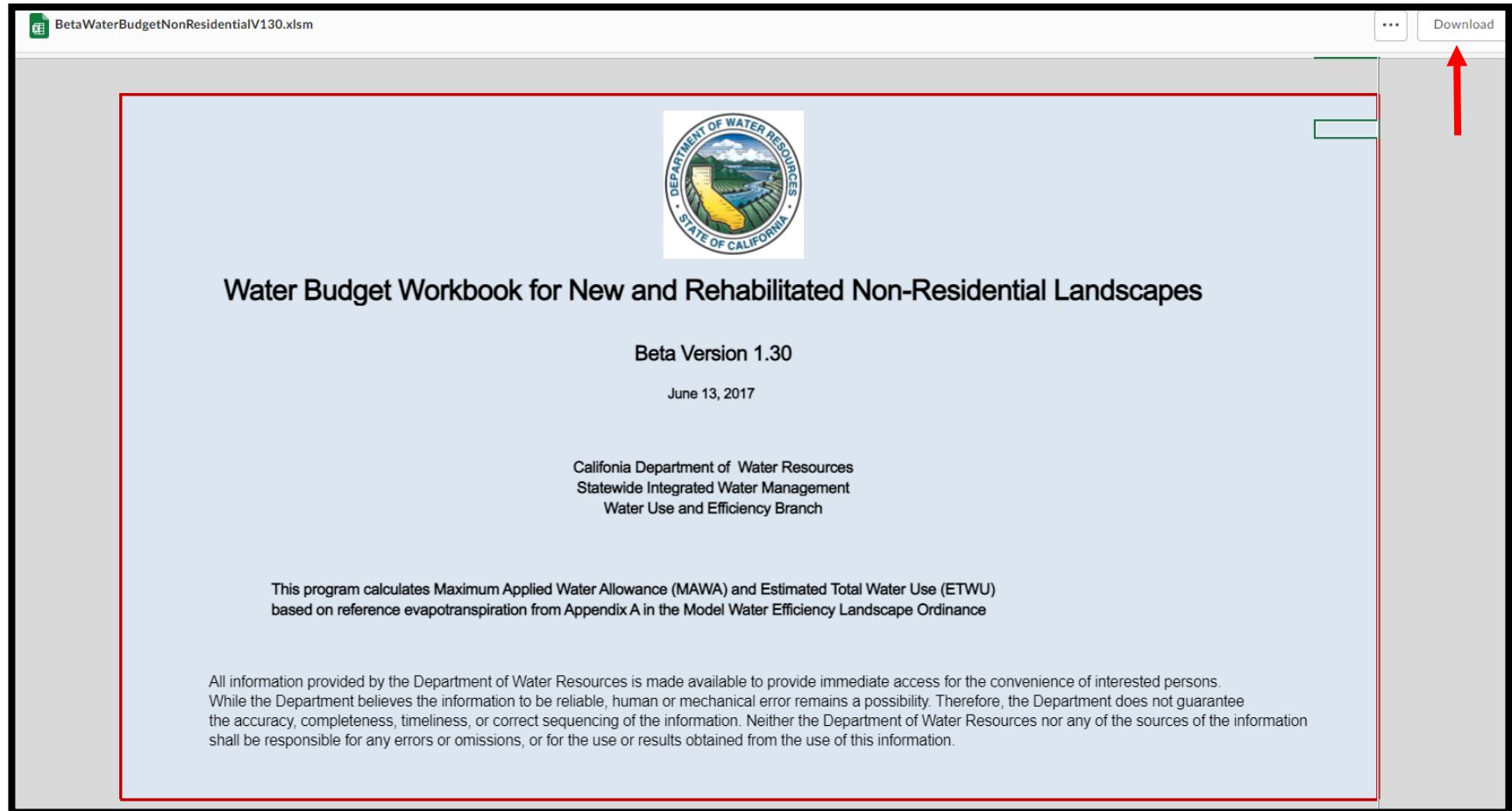
The ET₀ value needs to be obtained for all plants that are currently at the proposed project site, as well as all of the species that would be planted as part of the project itself. Once these values have been collected, they can be entered into the next tool, the DWR Water Budget Workbook.

B-3. DWR Water Budget Workbook User Guide

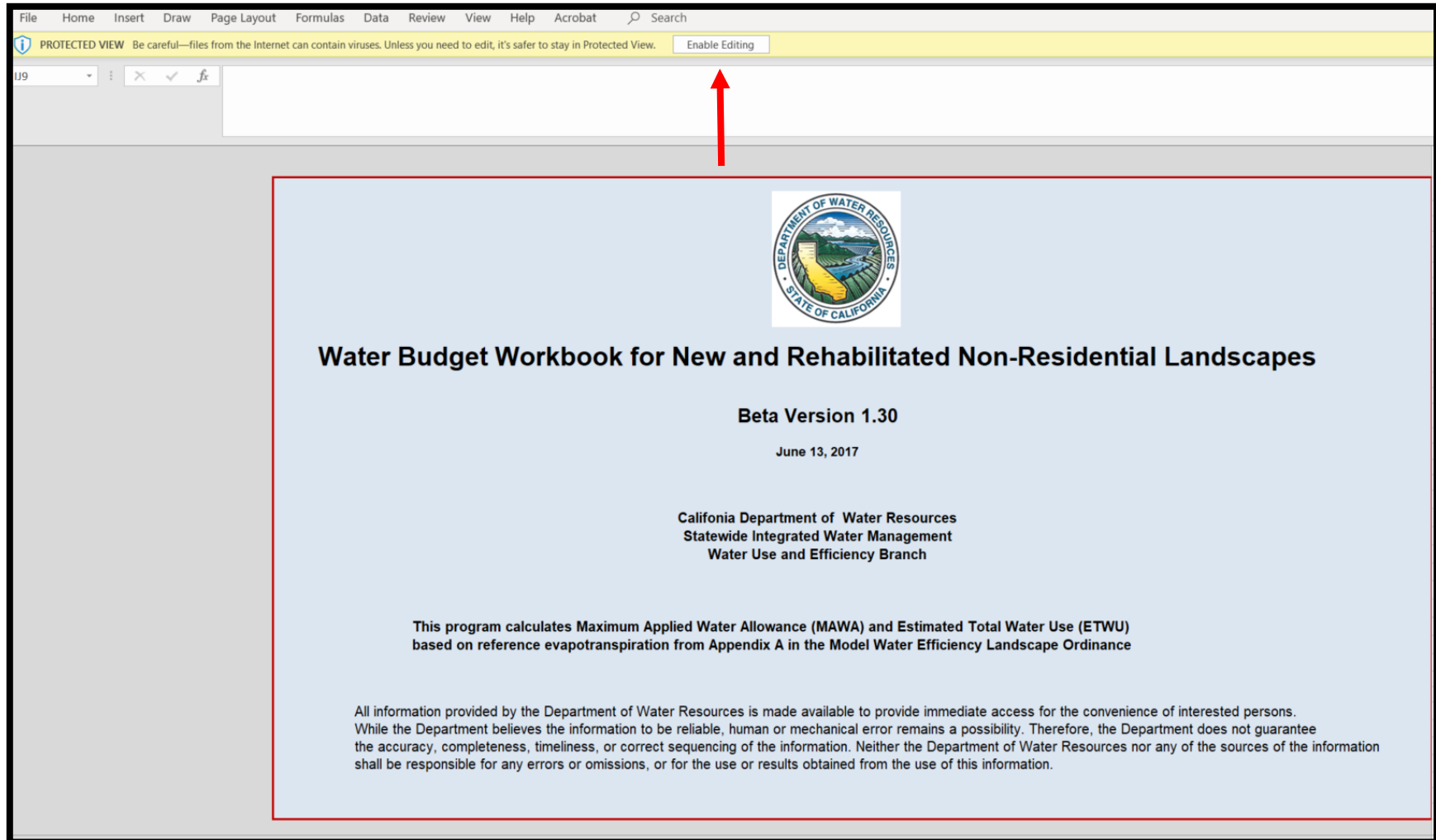
After the WUCOLS tool is run, the California Department of Water Resources' Water Budget Workbook for New and Rehabilitated Non-Residential Landscapes ("**DWR Water Budget Workbook**") should be used in order to estimate the amount of water and type of irrigation that the proposed project will require. This tool is available for download here:

<https://cadwr.app.box.com/s/5k39tv10u42rp5bn2uebd7fodkxzgve7>.

Step One – Download Tool. Clicking the link above opens an embedded workbook. In order to access the tool in Excel, click "Download" in the top right, as shown below.



Step Two – Enable Workbook. After downloading the spreadsheet, click “Enable Editing” in order to gain access to the spreadsheet.



This tool consists of three main tabs: Maximum Applied Water Allowance (MAWA), Estimated Total Water Use (ETWU), and Special Landscape Area (SLA).

For all proposed projects, this entire workbook must be filled out twice:

- Once using the current landscape characteristics of the proposed project site (“Pre-Project Scenario”), and
- Once accounting for the landscape characteristics after the proposed project is implemented (“Post-Project Scenario”).

To do so, it is recommended that the applicant save two copies of the Water Budget workbook: one for the Pre-Project Scenario, and one for the Post-Project Scenario.

Workbook cells highlighted in blue are ones for which data should be entered. Cells highlighted in tan display results and should not be adjusted.

“MAWA” Tab

Steps One through Three should be performed in the blue highlighted cells in the “MAWA” tab. For reference, a screenshot of this tab is provided on the next page. Note that there is additional instruction to the left of the data entry in this tab.

Step Three – Specify Project Location. In the tab “MAWA,” first select the city where the proposed project will be located. Note that Calexico and Heber are not options on the dropdown list, so selecting El Centro will likely be most appropriate for projects located within the Corridor.

Step Four – Specify Project Area. Next, enter square footage of the landscape area that is irrigated via overhead spray, as well as the square footage of landscape area that is irrigated by drip irrigation. Where prompted, also enter the square footage of any special landscape area on the project site. Special landscape area includes recreational area, area permanently and solely dedicated to edible plants, and area irrigated with recycled water.

Step Five – Specify Project Precipitation. If known, enter the annual precipitation at the project site in inches per year. If the annual precipitation is unknown, this cell can be left blank.

Maximum Applied Water Allowance Calculations for New and Rehabilitated Non-Residential Landscapes		
Enter value in Pale Blue Cells		
Tan Cells Show Results		
Messages and Warnings		
Click on the blue cell on right to Pick City Name ET _o of City from Appendix A Results: $(ET_o) \times (0.62) \times [(0.45 \times LA) + (1.0 - 0.45) \times SLA]$	El Centro	Name of City
	81.70	ET _o (inches/year)
	23000	Overhead Landscape Area (ft ²)
	27000	Drip Landscape Area (ft ²)
	43000	SLA (ft ²)
	93,000	Total Landscape Area
	3,317,575	Gallons
	443,497	Cubic Feet
	4,435	HCF
	10	Acre-feet
	3	Millions of Gallons
	MAWA calculation incorporating Effective Precipitation (Optional)	
	Precipitation (Optional)	
	82	ET _o (inches/year)
	93,000	LA (ft ²)
43,000	SLA (ft ²)	
	Total annual precipitation (inches/year)	
0.00	Eppt (in/yr)(25% of total annual precipitation)	
Results:		
MAWA = $[(ET_o - Eppt) \times (0.62)] \times [(0.45 \times LA) + ((1.0 - 0.45) \times SLA)]$	Gallons	
-	Cubic Feet	
-	HCF	
-	Acre-feet	
-	Millions of Gallons	



Next, move to tab "ETWU."

"ETWU" Tab

Steps Six through Nine should be performed in the blue highlighted cells in the "ETWU" tab. For reference, a screenshot of this tab is provided on the next page.

Note that after download, the tool will display example data in this sheet, with six hydrozones listed. Delete the irrigation type, plant factor, and hydrozone area columns before starting.

Step Six – Specify Irrigation Type. Fill out the irrigation type (overhead spray or drip) for each hydrozone. A hydrozone is a portion of the landscaped area having plants with similar water needs. If two different types of tree are planted as part of this project, then each type of tree qualifies as its own hydrozone. Additionally, if certain areas of the landscape are irrigated in different ways then those areas would constitute different hydrozones as well. Special Landscape Areas do not need to be entered on this tab.

Step Seven – Specify Area of Each Hydrozone. For each hydrozone, enter the area in square feet in the column labelled "Hydrozone Area Without SLA." The total area entered for all hydrozones on this page should match the total area entered on the "MAWA" tab. Special Landscape Areas do not need to be entered on this tab.

Step Eight – Enter Plant Factors. Next, input the correct plant factor for each hydrozone. This plant factor will be the average evapotranspiration rate (ET₀) that was obtained from the WUCOLS tool. Each type of plant will have its own plant factor, and thus may represent its own hydrozone. Special Landscape Areas do not need to be entered on this tab.

These three items will be input into the columns highlighted in blue, as shown below for a project with six example hydrozones:

Estimated Total Water Use						
Equation: $ETWU = ET_0 \times 0.62 \times [((PF \times HA)/IE) + SLA]$; Considering precipitation $ETWA = (ET_0 - Eppt) \times 0.62 \times [((PF \times HA)/IE) + SLA]$						
Enter values in Pale Blue Cells						
Tan Cells Show Results						
Messages and Warnings						
Irrigation Efficiency Default Value for overhead 0.75 and drip 0.81.						
Plant Water Use Type		Plant Factor				
Very Low		0 - 0.1				
Low		0.2 - 0.3				
Medium		0.4 - 0.6				
High		0.7 - 1.0				
SLA		1.0				
Hydrozone	Select System From the Dropdown List click on cell below	Plant Water Use Type (s) (low, medium, high)	Plant Factor (PF)	Hydrozone Area (HA) (ft ²) Without SLA	Irrigation Efficiency (IE)	(PF x HA (ft ²))/IE
Zone 1	Overhead Spray	High	0.70	5,000	0.75	4,667
Zone 2	Overhead Spray	Medium	0.50	4,000	0.75	2,667
Zone 3	Overhead Spray	Medium	0.40	3,000	0.75	1,600
Zone 4	Drip	Low	0.30	7,000	0.81	2,593
Zone 5	Drip	Low	0.30	15,000	0.81	5,556
Zone 6	Drip	Low	0.20	16,000	0.81	3,951

Step Nine – View Results. At the bottom of this tab, the workbook will display the estimated total water usage as shown below. Note this value (in gallons) for both the pre- and post-project scenarios, as it will need to be entered into tab “Tree Planting-ITP” of the CNRA calculations workbook.

Projects must comply with MAWA, per California’s updated Model Water Efficient Landscape Ordinance (MWELO).¹ This workbook will show if a project complies with MAWA as shown in red font in the screenshot below.

Results		Total Landscape Area including Special Landscape	
MAWA =	3,317,575	ETWU =	3,243,226 Gallons
			433,558 Cubic Feet
			4,335.58 HCF
			9.95 Acre-feet
			3.24 Millions of Gallons
			ETWU complies with MAWA

Note that the DWR Water Budget Workbook also includes a third tab, “SLA.” For purposes of these projects, the inputs on this tab do not affect the project results. Therefore, this tab can be ignored.

¹ California Model Water Efficient Landscape Ordinance (MWELO). Available: <https://water.ca.gov/Programs/Water-Use-And-Efficiency/Urban-Water-Use-Efficiency/Model-Water-Efficient-Landscape-Ordinance#:~:text=DWR/2015%20About%20half%20of%20the%20urban%20water%20is,by%20the%20Model%20Water%20Efficient%20Landscape%20Ordinance%20>. Accessed: February 2021.

B-4. CNRA Benefits Calculator Tool User Guide

After using i-Tree Planting, WUCOLS IV, and the DWR Water Budget Workbook, the California Natural Resources Agency (CNRA) **Benefits Calculator Tool** can be completed for the proposed urban greening project.

To access the tool, visit the following site: <https://ww2.arb.ca.gov/resources/documents/ci-quantification-benefits-and-reporting-materials?corr>.

Step One – Locate Tool. Scroll down to the section labelled “Natural Resources and Waste Diversion,” then look for the California Natural Resources Agency’s Urban Greening Program.

Step Two – Open Tool. Once identified, click the link for “Calculator Tool (Version 3),” as shown below, to open the tool. This will download an Excel file named “cnra_ug_finalcalculator_070820_v3.xlsx”. Open the Excel file and click the prompt to “Enable Editing” if necessary.

Calendar Help & FAQs Contact Careers English Español <input type="text" value="SEARCH CARB"/>				
ABOUT OUR WORK RESOURCES SERVICES RULEMAKING NEWS EQUITY				
Recovery				
California Department of Resources Recycling and Recovery	Waste Diversion, Organics Composting, Community Composting, Anaerobic Digestion/Co-Digestion, Food Waste Prevention and Rescue	Organics Programs QM Calculator Tool	Waste Diversion and Utilization	Waste Diversion and Utilization Community Compost
California Natural Resources Agency	Tree Planting Carbon Sequestration, Tree Planting Energy Savings from Shade, New Bike Paths or Lanes, New Pedestrian Facilities	Urban Greening Grant Program QM Calculator Tool (Version 3) <i>Note: Version 3 July 8, 2020, corrects an autofill field that was not populating correctly and a formula error ascribing the incorrect anticipated lifespan to Class II bike lanes.. No changes to the QM document/User guide were made.</i>	Urban Forestry and Urban Greening	Urban Greening Projects
California State Coastal Conservancy	Climate Ready Program, Tree Planting Carbon Sequestration, Carbon Farming, Climate Adaptation Planning	Climate Ready Program QM Calculator Tool	Healthy Soils Planning Urban Forestry and Urban Greening	Climate Ready Program

Step Three – Enter Project Information. Within the Excel file, two main tabs need to be updated manually. The first is labelled “Project Info.” This tab requires the applicant to enter the project name, contact information, and the requested funding amount. The items that should be filled out are highlighted in green.

While there are multiple line items set up for funding, the total amount of funding requested under the Imperial County AB 617 program should be entered in the row labelled “Total Urban Greening GGRF

Funds Requested," as shown below. Unless other funding is available, all other funding rows can be labelled as \$0.

Note to applicants:
 A step-by-step **user guide**, including a **project example**, for this Benefits Calculator Tool is available at:
http://www.arb.ca.gov/cc/capandtrade/auctionproceeds/cnra_ug_finaluserguide_050720_v2.pdf

Third-party tools:
 This Benefits Calculator Tool requires data inputs obtained from several third-party tools.
 The following third-party tools are required to use this Benefits Calculator Tool:

i-Tree Planting	Available at: https://planting.itreetools.org/
i-Tree Tools	Available at: https://www.itreetools.org/streets/index.php
Water Budget Workbook for New and Rehabilitated Non-Residential Landscapes	Available at: http://water.ca.gov/
Water Use Classification of Landscape Species (WUCOLS IV)	Available at: http://ucanr.edu/

Information for using i-Tree tools is available in the user guide (see above).
 Information and examples for using the water tools is available in the Water Savings Assessment Methodology at: www.arb.ca.gov/cci-cobenefits.

Urban Greening applicants must enter the applicable information in the table below before proceeding with the project-specific data on the Inputs tab.

Project Name:	
Applicant ID:	
Contact Name:	
Contact Phone Number:	
Contact Email:	
Date Calculator Completed:	
Total Urban Greening GGRF Funds Requested (\$):	\$ Enter requested funding amount here -
Other GGRF Leveraged Funds (\$):	\$ -
Total GGRF Funds (\$):	\$ -
Non-GGRF Leveraged Funds (\$):	\$ -
Total Funds (\$):	\$ -



Key for color-coded fields:	
Green	Required input field*
Grey	Output field / not modifiable
Yellow	Helpful hints / important tips

*See "Documentation" tab for additional information

After the "Project Info" tab has been filled out, go to tab "Tree Planting-ITP." Steps Four and Five should be entered on the "Tree Planting-ITP" tab.

Step Four – Enter Water Usages.

At the top of the “Tree Planting – ITP” tab, there are two rows to enter the estimated annual baseline on-site water use and the estimated annual on-site water use after planting. Here, enter the estimate total water usage (ETWU) from the DWR Water Budget Workbook. Enter the value from the pre-project scenario in row 16, and the value from the post-project scenario in row 17, as shown below:

Estimated Change in Water Irrigation from Planting Trees	
Enter data below after using the UCANR Water Use Classification of Landscape Species (WUCOLS IV) and the DWR Water Budget Workbook for New and Rehabilitated Non-Residential Landscapes (Water Budget Workbook).	
If Project Involves Additional Irrigation, Estimated Annual Baseline On-site Water Use (gal/yr)	Enter pre-project ETWU from DWR Workbook here 
If Project Involves Additional Irrigation, Estimated Annual On-Site Water Use After Planting (gal/yr)	Enter post-project ETWU from DWR Workbook here 
Irrigation Savings Over 40 Year Quantification Period (gal)	0

Step Five – Enter Data from i-Tree Planting. In the second table on the “Tree Planting – ITP” (shown below), enter the results from the i-Tree Planting Report as prompted. Enter the results for each individual group of trees in a separate row. Once all of the green cells below have been populated, this tool will calculate emission reductions as well as water and energy savings at the bottom of the tab.

Tree Planting Benefits									
Enter data below after using i-Tree Planting to estimate tree carbon storage, electricity savings, natural gas savings, and co-pollutants removed due to the groups of trees.									
Group Identifier	Tree Group Characteristics	Quantity of Trees to be Planted within this Tree Group	Carbon Stored in Tree Group Over the 40 Year Quantification Period (lb CO ₂ e)	Electricity Savings From Tree Group Over the 40 Year Quantification Period (kWh)	Natural Gas Savings From Tree Group Over the 40 Year Quantification Period (MMBtu)	NO ₂ Removed Over the 40 Year Quantification Period (lb)	PM _{2.5} Removed Over the 40 Year Quantification Period (lb)	Rainfall Interception Over the 40 Year Quantification Period (gal)	Avoided Runoff Over the 40 Year Quantification Period (gal)

The data from the i-Tree Planting output file should match the table above as shown below:



Data Label in Exported i-Tree Planting Report	Data Label in Tab "Tree Planting – ITP"
Group Identifier	Group Identifier
Tree Group Characteristics	Tree Group Characteristics
CO ₂ Sequestered (pounds)	Carbon Stored in Tree Group over the 40 Year Quantification Period
Electricity Saved (kWh)	Electricity Savings from Tree Group over the 40 Year Quantification Period
Fuel Saved (MMBtu)	Natural Gas Savings from Tree Group over the 40 Year Quantification Period
NO ₂ Removed (pounds)	NO ₂ Removed Over the 40 Year Quantification Period
PM _{2.5} Removed (pounds)	PM _{2.5} Removed Over the 40 Year Quantification Period
Rainfall Interception (gallons)	Rainfall Interception Over the 40 Year Quantification Period
Avoided Runoff (gallons)	Avoided Runoff Over the 40 Year Quantification Period

The workbook contains two additional data entry tabs highlighted in green. The "Tree Planting-ITS" tab should not be filled out (the "Tree Planting – ITS" tab is designed as an alternative input tab for use with alternative software that is no longer supported).

The "New Bike-Ped Infrastructure" tab is used for estimating benefits from implementation of new bicycle or pedestrian infrastructure. This action was not identified as a requirement under Measure M-2 of the Imperial County Community Emissions Reduction Plan, so this tab may also be skipped.

Step Six – View Results. Results are viewed on the gray-highlighted tabs, "GHG Summary" and "Co-benefit Summary". The applicant does not need to fill in any information in these tabs. However, the applicant shall attach a copy of these results to the Imperial County AB 617 Project Application form as prompted. Screenshots of these two tabs are shown on the following pages:

Tab "GHG Summary:"

 <p>Cap and Trade Dollars at Work</p>	<p>California Air Resources Board</p> <p>Benefits Calculator Tool for the Urban Greening Grant Program</p> <p>California Climate Investments Version 3 - July 8, 2020</p>	
<p>Project Name: <input style="width: 80%; border: none;" type="text"/></p>		
Project Information		
Total Urban Greening GGRF Funds Requested (\$)	\$	-
Other GGRF Leveraged Funds (\$)	\$	-
Total GGRF Funds (\$)	\$	-
Non-GGRF Leveraged Funds (\$)	\$	-
Total Funds (\$)	\$	-
GHG Summary		
GHG Benefit of Carbon Stored in Live Project Trees Estimated Using i-Tree Planting (MT CO ₂ e)		0
GHG Benefit of Carbon Stored in Live Project Trees Estimated Using i-Tree Streets (MT CO ₂ e)		0
GHG Benefit from Energy Savings Estimated Using i-Tree Planting (MT CO ₂ e)		0
GHG Benefit from Energy Savings Estimated Using i-Tree Streets (MT CO ₂ e)		0
Avoided GHG from Establishment of New Bicycle and Pedestrian Facilities (MT CO ₂ e)		0
GHG Emissions from Tree Planting Project Implementation (MT CO ₂ e)		0
Total Urban Greening GHG Benefit (MT CO ₂ e)		0
Total GHG Benefit (MT CO ₂ e)		0
Total GHG Benefit per Total Urban Greening GGRF Funds (MT CO ₂ e/\$)		0
Total GHG Benefit per Total Funds (MT CO ₂ e/\$)		0

Tab "Co-benefit Summary:"

Project Name:	
Co-benefits and Key Variables Summary	
Urban Greening GGRF Funds	
Total PM _{2.5} Emission Reductions (lb)	0
Total NOx Emission Reductions (lb)	0
Total ROG Emission Reductions (lb)	0
Total Diesel PM emission reductions (lb)	0
Remote PM2.5 Emission Reductions (lb)	0
Remote NOx Emission Reductions (lb)	0
Remote ROG Emission Reductions (lb)	0
Trees Planted	0
Total Water Savings (gal)	0
Annual Water Savings (acre feet/year)	0
Fossil Fuel Based Energy Use Reductions (kWh)	0
Fossil Fuel Based Energy Use Reductions (therms)	0
Energy and Fuel Cost Savings (\$)	\$0
Passenger VMT Reductions (miles)	0
Fossil Fuel Based Transportation Fuel Use Reductions (gal)	0
Travel Cost Savings (\$)	\$0
Total	
Total PM _{2.5} Emission Reductions (lb)	0
Total NOx Emission Reductions (lb)	0
Total ROG Emission Reductions (lb)	0
Total Diesel PM emission reductions (lbs)	0
Remote PM2.5 Emission Reductions (lb)	0
Remote NOx Emission Reductions (lb)	0
Remote ROG Emission Reductions (lb)	0
Trees Planted	0
Total Water Savings (gal)	0
Annual Water Savings (acre feet/year)	0
Fossil Fuel Based Energy Use Reductions (kWh)	0
Fossil Fuel Based Energy Use Reductions (therms)	0
Energy and Fuel Cost Savings (\$)	\$0
Passenger VMT Reductions (miles)	0
Fossil Fuel Based Transportation Fuel Use Reductions (gal)	0
Travel Cost Savings (\$)	\$0