



Newsletter

Landscaping and Trails Committee

High Desert Gardening

April 2022

LTC Initiates a Geographic Information System (GIS) Project for Mirehaven

Sharon M. Douglas

The Landscaping and Trails Committee (LTC) started a project in January 2022 to inventory all plants in common landscaping areas at Del Webb Mirehaven and the Joint Maintenance Area (JMA). The project recently expanded into using a Geographic Information System (GIS). GIS is a relational database mapping system that has the capability to create, manage, analyze, and map many different types of data. It is a computer program that allows us to capture, store, check, and display data related to their position on Earth's surface (geo-referenced). GIS accurately presents many different attributes, such as: plants, benches, or trail lights, in separate layers upon a base layer map. Because GIS provides a powerful foundation for mapping and analysis, it is used in science and almost every industry and municipality throughout the world. It allows one to: identify problems, manage and respond to events, monitor change, set priorities, forecast, and understand trends.

The LTC is using the open source software QGIS to create our project (<https://www.qgis.org/en/site/>). We initiated this project by focusing on Phase 2, since the plant inventory for this phase had been completed in January. By focusing on one phase, we were able to construct a manageable database to use as “proof-of-concept” before adding other phases.



Figure 1. Bottom Raster Layer overlayed with colored layer with parcel numbers for all phases of Mirehaven and the JMA.

The GIS project consists of layers of differing data (e.g., tree layer, irrigation layer) which are overlayed on a base map (Raster layer)

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that was constructed by geo-referencing an aerial map from Google Earth. Moving upward, the next overlaying layer (Common Area-Parcel Number Layer) includes numbered parcels for all common landscape areas in Phases 1, 2, 3, 4, and the JMA. Each parcel has been color-coded to represent the LTC member responsible for that particular parcel (Figure 1).

The third layer (Tree Layer) includes the common and scientific name of each tree, its geo-referenced location, the type of irrigation (none, drip, or sprinkler), and the number and type of drip nozzles per tree (e.g., 8 L/hr, 16L/hr) (Figures 2 & 3). We expect to populate this layer with data on total liters/hr, irrigation frequency, and liters/week for each tree once more details about the irrigation system are learned when Green Summit turns on the system this spring. We also plan to include a rating for tree health based on a scale of 0-5 (0=dead, 5=healthy). These data allow us to make queries to get specific answers. For example, we can sort for all of the Blue Atlas Cedars in our common areas and look at their health; if many are doing poorly or dead, it will allow us to make informed decisions about replanting.



Figure 2. Part of Phase 2 with Tree Layer (bottom raster layer map is turned off).

The fourth layer (Tree Irrigation Layer) uses the same database constructed for the Tree Layer to create a map showing the amount of water each tree is getting—it will give a

quantitative and a visual impression of irrigation differences between each tree (Figure 4). These data can also be used to make queries. For example, we can examine

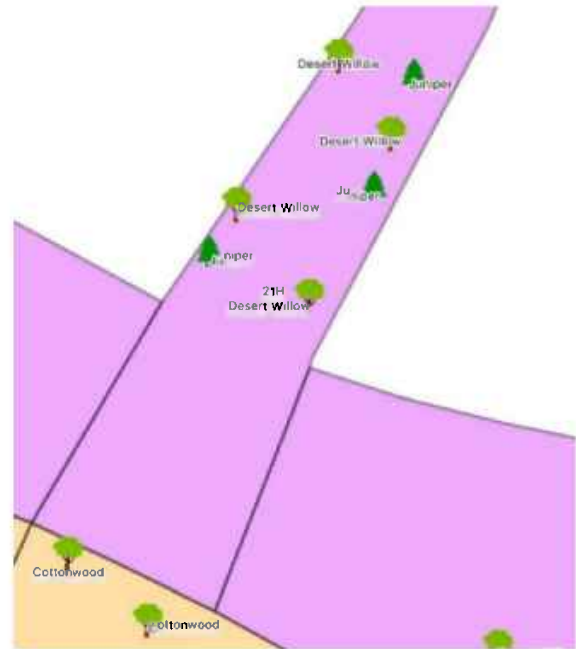


Figure 3. Close-up of Tree Layer (bottom raster layer map is turned off).

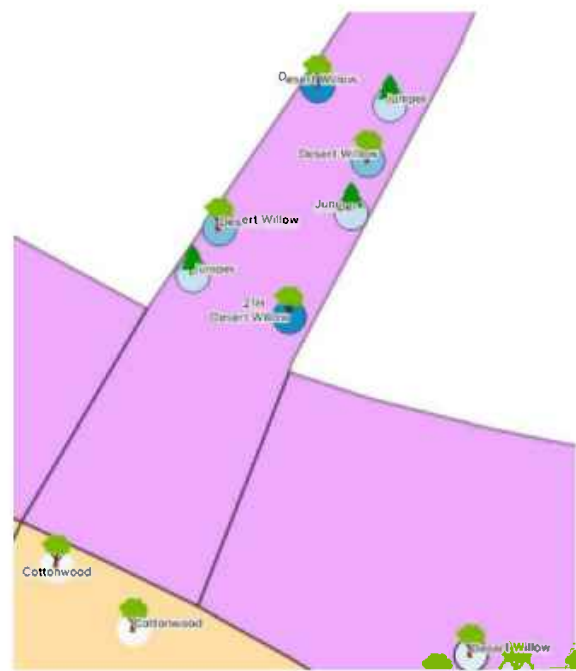


Figure 4. Close-up of Tree Layer showing the amount of water each tree is getting from drip irrigation (bottom raster layer map is turned off).

all of the desert willows and the amount of irrigation each tree is receiving, while also looking at overall tree health. If trees getting less or no water are healthier than trees getting too much water, we can make informed decisions about reducing irrigation as well as better ways to regulate water use and save money.

A fifth layer (Grass, Perennial, and Shrub Layer) is in the early stages of construction and will include the same information about each plant that we included in the Tree Layer.

Additional mapping layers that focus on utilities and infrastructure will eventually include: Irrigation Layer (e.g., irrigation control boxes, irrigation valves, and irrigation zones); Electric/Lighting Layer (e.g., photocell controllers, street and pathway lights); Infrastructure Layer (e.g., dog pot stations, benches, trash cans, mail kiosks) (Figure 5).



Figure 5. Close-up view of Phase 2 with Parcel Number Layer and Street Light/Controller Layer (bottom raster layer map turned off).

As we build this GIS project for Mirehaven, each data point will need to be “ground-truthed” by LTC members using physical maps to verify that data entered into the QGIS program were correct.

Because of the enormity of this project, the LTC welcomes Mirehaven resident volunteers (non-LTC members) with

expertise in Geographic Information System (GIS) to assist with data entry. Please contact: smdouglas54@comcast.net or dwmlandscapetrails@gmail.com for more information.

This will be an ongoing project where we can build on or modify any of the layers to reflect additions or subtractions of plants or infrastructure changes. But as we transition to a homeowner-directed HOA, the information in this project will be valuable for making informed management decisions about our common area landscapes.



How to Celebrate Earth Day 2022

Earth Day is Friday, April 22, 2022. Every year on April 22nd, Earth Day is celebrated to mark the anniversary of the birth of the modern environmental movement in 1970. The first Earth Day inspired 20 million Americans to call for increased protections for our planet. In 1990, Earth Day went global and now mobilizes over 200 million people in more than 141 countries to advocate for environmental awareness.

Plant a New Plant:

Beth Duncombe

To ensure that your new spring plants thrive, 505Outside presents How to Plant Your New Plants in this month’s newsletter: <https://www.505outside.com/2022/03/01/8-steps-to-planting-a-healthy-plant/> (Figure 1).

8 STEPS TO A HEALTHY PLANT

1 SELECT THE RIGHT PLANT FOR THE RIGHT SPOT
Sun-loving plants should go into sunny spaces, shade-loving plants should be placed under trees or beside walls where they'll be protected from our harsh New Mexico sun. They make sure the area is big enough to accommodate the plant when it's reached its full mature size. (Remember, big is great, plants with similar water needs together.)

2 DIG THE RIGHT SIZE HOLE AND LOOSEN THE SOIL
The "right size" for trees and shrubs is about three times wider and just a few inches deeper than the depth of the root ball. For annuals and perennials, the soil should also be loosened up three to five times the diameter of the container you're planting from. If you dig a hole that's just big enough for the plant's root ball, you greatly have how far the roots can easily grow and spread.

3 CAREFULLY REMOVE PLANT FROM CONTAINER AND SEPARATE MATTED ROOTS
Turn small plants upside down, supporting the soil with your hands. Tap the pot to loosen the soil from the sides of the pot, then lift the pot off the root ball. Pulling annuals and perennials out by the stems and leaves can damage the plant.
Use a knife to sharply trim to cut four vertical ribs, one on each side of the root ball. Make several smaller cuts on bottom of root ball. Use your fingers to "rough out" matted roots on sides and bottom.

4 PLACE PLANT AND BACKFILL THE HOLE
Place the plant in the hole, making sure that the top of the root ball is about level with the surrounding soil. Shovel the soil around the plant's roots to fill the hole and tamp gently to remove any large air pockets. Where plants will be watered by hand or will be supplemented with fertilizer, they should be planted as bare, shallow basins (at least 4" deep and as wide as possible) to hold water so it soaks in deeply.

5 GIVE THE PLANT A GOOD SOAKING
Even water-thrifty xeric plants need a healthy drinking when transplanted. Make sure you soak the plant's entire root zone. (Keep in mind that your new plants will need more frequent watering during their first year than during subsequent years.)

6 MULCH IT!
A thick layer of mulch (2-4" deep depending on the size of the plants) will minimize evaporation, cool the soil and reduce weed growth. Created 1/2" or 3/4" gravel, pea or shells, coarse textured compost and built are their commonly used mulches.

7 USE EFFICIENT IRRIGATION
The majority of xeric plants suitable for New Mexico landscapes can be watered efficiently using drip irrigation. Drip emitters save water because they deliver a slow, steady dose of water directly to a plant's root zone, significantly reducing water loss to evaporation.

8 MAINTAIN YOUR XERISCAPE
Even a low-maintenance xeriscape requires some maintenance. Periodically check your irrigation system for leaks or clogs. Clean filter and check drip emitters to prevent plugging. For trees and large shrubs, you may need to move emitters outward and add extra emitters as plants grow so the water soaks the entire root zone.

Figure 1. How to plant, from: <https://www.505outside.com/2022/03/01/8-steps-to-planting-a-healthy-plant/>

Is It Time to Prune Roses?

Marisa Thompson, Horticulture Specialist with the NM State University, writes in *Desert Blooms* that the best time for pruning roses is two to four weeks before the risk of the final hard frost, which in Albuquerque is typically early May. However, even when you prune at this time, there is still some risk of damage to the plants from an abnormal late freeze. She cautions that there is more harm

in pruning roses too early than too late. Marissa also reminds readers that climbing roses should be pruned after they bloom because climbing roses usually bloom on old growth.

For detailed instructions on pruning roses, check out *Desert Blooms* at the NM State University Website. <https://aces.nmsu.edu/ces/yard/archives/030720.html>. *Desert Blooms*, from the NM State University, is an excellent site for how to care for our native and other garden plants. <https://desertblooms.nmsu.edu>.



Ways to Celebrate Arbor Day 2022 Sharon M. Douglas

Arbor Day is Friday, 29 April 2022. In some ways, Arbor Day is similar to Earth Day—both are holidays that celebrate nature. The name “Arbor Day” can be translated to “tree” day from the Latin origin of the word *arbor*—it is a holiday that focuses on celebrating trees by the planting, upkeep, and preservation of trees.



- Identify and learn more about the tree species planted in your streetscape and front yard.
- Check the drip nozzles to your trees to make certain they are working correctly.
- It is also important to make certain that nozzles are spaced away from the trunk and moved out to the drip line of the tree canopy. This is especially important for streetscape trees in Phases 1 & 2, because they have grown since they were planted and the drip systems were installed.
- Remove supporting tree stakes and ties after the first year of growth or after one growing season.
- Move the stones away from the tree and apply bark mulch out to the drip line of the tree.
- Prune any dead or dying branches and rub off small sprouts along the trunk.
- See if you qualify for a “Tree-Bate” from the ABC Water Utility Authority (see below).



The “Tree-Bate” is 25 percent of the cost of professional tree care, or for purchase of new low and medium water use trees that appear on the [Water Authority’s xeriscape plant/tree list guide](#). The maximum rebate for residential customers is **\$100** per year. Besides the purchase of new trees, other services and items may also qualify for the rebate. Examples are: professional tree care such as pruning, fertilization, pest management, or installation. Examples of other items that may qualify are: irrigation equipment such as deep watering stakes,

organic mulch, or soil amendments such as compost.

To help its customers narrow down their purchasing decisions, the Water Authority has assembled a [list of 20 trees](#) (downloadable 1.5MB pdf) that are proven to thrive in our area, are commonly available for purchase, fit a variety of situations, and provide numerous environmental benefits. However, before purchasing a tree, consult the [ARC Guidelines](#) ([https://www.delwebb mirehaven.com/Assets/The+Estates+at+Mirehaven+Community+Association+Digital+Assets/Governing+Documents/Design+Guidelines\\$!2c+Amended+\\$!26+Corrected+12-12-2021.pdf](https://www.delwebb mirehaven.com/Assets/The+Estates+at+Mirehaven+Community+Association+Digital+Assets/Governing+Documents/Design+Guidelines$!2c+Amended+$!26+Corrected+12-12-2021.pdf)) to make certain the tree is on their list of acceptable trees.

Visit: <https://www.505outside.com/residential-treebates/> for details.

Educational Opportunities

Osuna Nursery

April 9- 11:00am

“10 Underutilized (yet fantastic) plants to consider this Spring” by Amos Arber (ABC Water Authority Xeriscape Incentive Inspector)

May 14- 11:00am

“Hands on Irrigation Workshop” by Richard Perce (ABC Water Authority Irrigation Expert)

George Miller, Author

In February, the Landscaping and Trails Committee was delighted to present George Miller, renowned author on Southwest Gardening. We are working on additional speakers in the months to come. In case you missed the lecture, George provided a list of suggestions for Adaptive Native Landscape Plants for our high desert location at his lecture. Michelle Surplus also sent the list in

an email to residents (16 March 2022). The list follows below.



**ECO-REGIONS OF ALBUQUERQUE – WEST MESA
ADAPTIVE NATIVE LANDSCAPE PLANTS**

DESERT MESAS

Habitat: windblown sand, gravelly soils

Wildflowers

Black-eyed Susan – *Rudbeckia hirta*
Blackfoot Daisy – *Melanopodium eucanthum*
Blanket Flower – *Galatella puchela*
Chocolate Flower – *Berlandiera lyrata*
Common Sunflower – *Helianthus annuus*
Cowpen Daisy – *Verbesina encaloides*
Cuteleaf Daisy – *Engelmannia peristylata*
Desert Malow – *Sphaeralcea* species
Desert Marigold – *Balsamorhiza hirsuta*
Desert Zinnia – *Zinnia grandiflora*
Devil's Claw – *Proboscidea parviflora*
Gayleather – *Leslia punctata*
Giant Four O'Clock – *Mirabilis multiflora*
Goldenrod – *Solidago* species
Louisiana Sage – *Artemisia ludoviciana*
Manilla – *Purshia encarnum*
Millennial species – *Asclepias* species
Penstemon species
Prairie Coneflower – *Ratibida columnifera*
Purple Aster – *Dielsia canescens*
Purple Verbena – *Glandularia bipinnatifida*
Sacred Datura – *Datura wrightii*
Sandpuffs – *Tripterocarpus canescens*
Snowball Sand-Verbena – *Abronia fragrans*
Splay Dogwood – *Thymophylla ascarosa*
Starrless Evening Primrose – *Oenothera caespitosa* (white)
Sundrops (Evening Primrose) – *Oenothera lutea* (yellow)
Tansy Aster – *Machaeranthera tanacetifolia*
Threadleaf Groundsel – *Senecio biocoides*
Woolly Paperflower – *Palafoxia lagellata*
Yarrow – *Achillea millefolium*

Shrubs & small trees

Apache Plume – *Falkugia paradoxa*
Beargrass – *Nolina Greenei* (macrocarpa)
Cholla Cactus – *Cylindropuntia imbricata*
Desert Willow – *Chilopsis linearis*
Femtush – *Chamaebotria millefolium*
Honey Mesquite – *Prosopis glandulosa*
Mexican Elderberry – *Sambucus caerulea*
Mt. Mahogany – *Cercocarpus montanus*
Nelson Hackberry – *Celtis reticulata*
New Mexico Olive – *Forsythera pubescens*
Oak, Scrub – *Quercus turbinella*
Prickly Pear Cactus – *Opuntia* species
Red Yucca – *Hesperaloe* species
Sand Sage – *Artemisia filifolia*
Snakeweed – *Gutierrezia sarothrae*
Sole – *Solanum elaeagnifolium*
Three-leaf Sumac – *Rhus aromatica*
Wolfberry – *Lycium pallidum*
Yucca – *Yucca* species

Adapted from "Landscaping with Native Plants of the Southwest" by George Miller

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Do you have comments or questions about landscaping in common areas of our community? We would also be happy to hear your ideas for helping the LTC improve educational programs and communication within the community.

The Landscaping and Trails Committee has a new, direct email:

dwmlandscapetrails@gmail.com



Call for Speaker Suggestions

If you know any high desert gardening experts who might be interested in speaking to our community, please send your suggestions to

dwmlandscapetrails@gmail.com.