Tree New Mexico - ABQ NeighborWoods

Final Report South Broadway

August 2021

Author:

Betta Eisenberg

Program Manager, Tree New Mexico

Contents

I. Background

The Trees and Health Study performed in 2013 [1] reported that Albuquerque lost more tree canopy (2.7% of its tree canopy over a 3year period) than cities that had experienced natural disasters like flood and tornado. In order to start replacing this lost tree canopy, the ABQ NeighborWoods Program was founded. Championed by Albuquerque City Councilor Isaac Benton, a team was formed which included other city and state partners such as American Society of Landscape Architect (ASLA) members Amy Bell and Robert Loftis, New Mexico State Urban Forester Jennifer Dann, Albuquerque City Forester Joran Viers, Albuquerque Planning, the Albuquerque Office of Neighborhood Coordination, and Tree New Mexico (TNM). The team felt it was imperative to engage homeowners particularly, as close to 85% of Albuquerque's trees were located on private property. Councilor Benton set the precedent by using a portion of his discretionary budget to fund the program.

Briefly, the ABQ NeighborWoods grant includes 100 free street trees planted in a single day by volunteers, and 100 free small giveaway trees that homeowners can plant anywhere on their property themselves. The street tree planting criteria for city egress is limited to within 20 feet of the street. The homeowners adopting the street trees are required to sign an agreement with the city promising to water and care for the trees. The grant also includes an arborist audit for 3 years with feedback to the homeowners if any issues are found. Pertinent training on various tree topics such as pruning, and the Tree Plotter database are also included.

South Broadway was the second ABQ NeighborWoods grant recipient in District 2. Creating shade corridors was encouraged so neighbors would want to get outside and walk more. Studies have shown direct correlations between trees and an improvement in health and a decrease in crime. One hundred street trees were planted in a big volunteer event on Nov 18, 2017. The smaller trees were given away the next weekend.

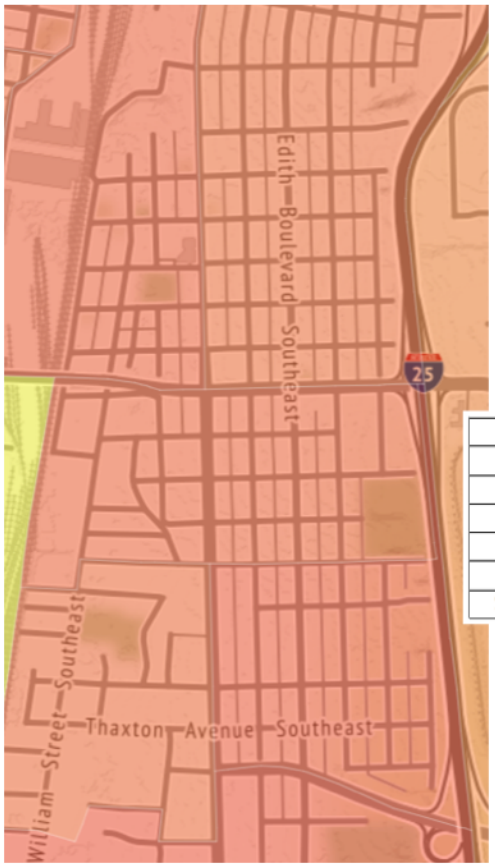
The ABQ NeighborWoods Program has since expanded across all but one of the Albuquerque City Councilors' districts. ABQ NeighborWoods plantings have been held since 2017, with over 4400 trees planted and given away.

[1] Trees and Health App http://map.treesandhealth.org/

II. Tree Planting

The Tree Canopy Percentage in South Broadway was well below the Albuquerque city average, according to the Trees and Health Study. [2] (Figure 1)

Fortunately, the neighborhood had planting strips that would accommodate shade trees along with front yard spaces. Planting trees in these areas, especially the planting strips, provides the best canopy cover for the sidewalks. (Figure 2)



Albuquerque, NM	Value	City Avg
% tree canopy cover	4	7
TRAQ	10.95	8.28
urban heat island index	0.50	0.41
% of residents under age 18	34	22
% of residents over age 65	12	14
% of residents living under poverty level	34	18

Figure 1
Heat map of Rt66W neighborhood – http://map.treesandhealth.org/

[2] http://map.treesandhealth.org/

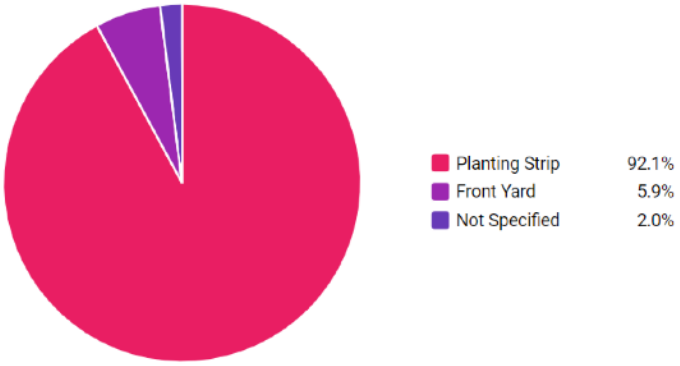


Figure 2

Growing Space - Tree Plotter App https://pg-cloud.com/TreeNM/

The neighborhood leaders identified Walter and also Trumbull which had a bus route on it as the primary concentration points. They agreed to pursue adjacent streets as well.

They then split up the territory into parts and neighborhood leaders helped to canvass.

The neighborhood leaders were successful in getting all the tree adopters needed to place the 100 trees (Figure 3)

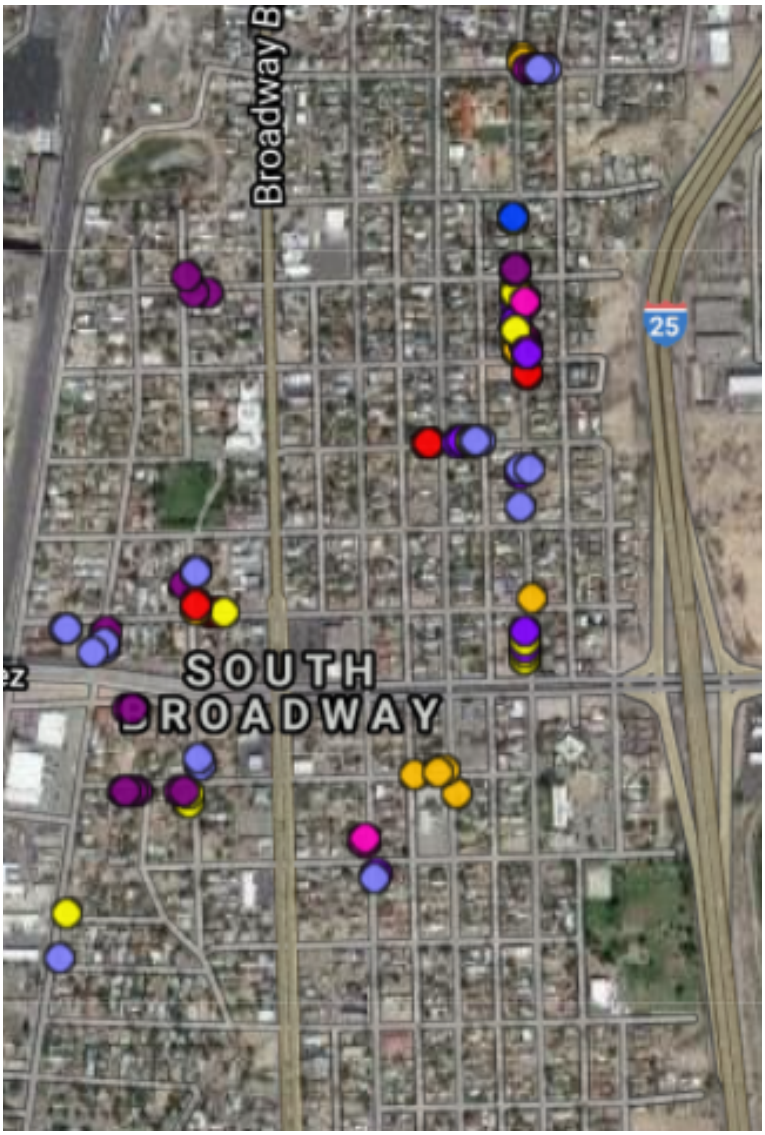


Figure 3

Planting Map – Tree Plotter - https://pg-cloud.com/TreeNM/

III. Survivability

The ABQ NeighborWoods survivability goal was purposely set to a challenging 85% over three years of tracking. This summer marked the 3rd year for South Broadway, and thus a thorough inventory was performed on June 6, 2021.

The South Broadway neighborhood fell just short of the survivability goal at 83%, this is one of our best

results to date. (Figure 4**).**

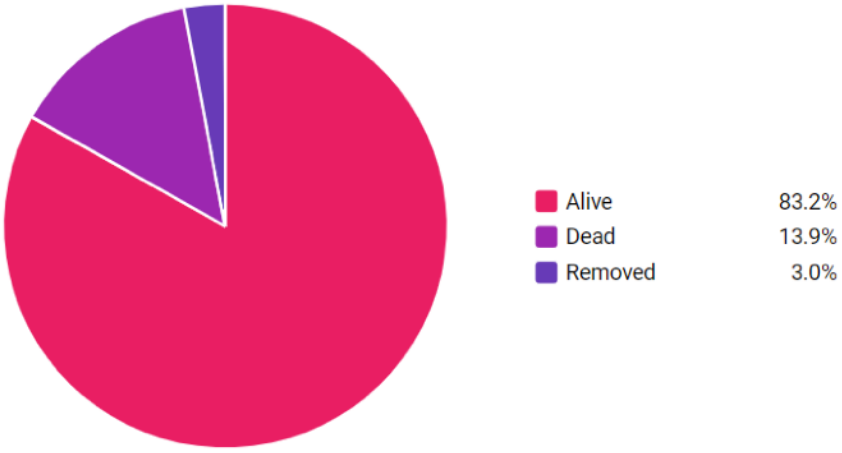


Figure 4
Overall Survivability - Tree Plotter App https://pg-cloud.com/TreeNM/

Mortality rates varied by species: The Catalpa, the Flowering Pear, and the Chinese Pistache were the most affected. The main contributor to mortality and ill health over the three-year study was reported by our arborist audits as the lack of consistent, deep, watering. (Figure 5).
As we continue to learn from all our neighborhood results, we are no longer, or very rarely planting the Catalpa, the Flowering Pear varieties.

COMMON NAME	COUNT
Frontier Elm	20
Desert Willow	19
Chinese Pistache	19
Pear	11
Catalpa	11
Allee Elm	10
Raywood ash	10
Hackberry	1

Species with Most Mortality - Top 10

COMMON NAME	COUNT
Catalpa	5
Pear	4
Chinese Pistache	3
Desert Willow	1
Raywood ash	1

Figure 5 Species Survivability - Tree Plotter App https://pg-cloud.com/TreeNM/

IV. Eco Benefits

As noted above, a tree inventory was completed on June 6, 2021, to also assess how much the street trees had grown.

The most marked growth occurred in the Frontier and Alee Elms that got consistent watering. In some cases, the diameter DBH increased from 1 inch to close to 3 inches and the height went from 8 feet to almost 20 feet. There were a couple of Flowering Pears and also a couple of Raywood Ash that displayed similar growth characteristics.

Using the Tree Plotter data base, the current Eco benefits were calculated. (Figure 7)
South Broadway displayed some of the best Eco Benefits of the neighborhoods that were audited this year.

Total Eco Benefits

Overall Monetary Benefit ($):	206
Stormwater Monetary Benefit ($):	6
Runoff Prevention (Gallons):	1,192
Property Value Total ($):	162
Energy Savings ($):	18
Energy Saved (kWh):	230
Natural Gas Savings ($):	13
Heat Prevention (Therms):	12
Air Quality Monetary Benefit ($):	4
Pollutants removed (lb):	5
Carbon Monetary Benefit ($):	3
Carbon Sequestered (lb):	422
Carbon Avoided (lb):	535

Figure 7
Eco Benefits - Tree Plotter App (Using iTree Algorithms) https://pg-cloud.com/TreeNM/

Eco Benefits Long Term

Using iTree, a general benefits forecast for 200 trees after 20 years of average growth was calculated (Figure 8).

This calculation is used to help educate neighbors on the environmental benefits of planting trees today for the future.

My Tree Benefits Wells Park	200 Trees After 20 Years
Carbon Dioxide (CO2 Sequestered)	$520.00
CO2 Absorbed Each Year (lbs)	51,860
Storm Water	$260.00
Rainfall Intercepted Each Year (gal)	40,000
Air Pollution Removed Each Year	$160.00
Ozone (oz)	940
Other Particulates (oz)	440
Energy Usage Each Year	$9,640.00
Electricy Savings A/C (kWh)	77,800
Avoided Emissions	
Carbon Dioxide (lbs)	164,300
Other Particulate Matter (oz)	2,420

Figure 8

itree – https://www.arbutustree.ca/itree-how-much-are-my-trees-worth/

V. Learnings and Program Improvements

- The greatest contributor to the mortality of the trees regardless of species was a lack of consistent deep watering. We are no longer, or very rarely, planting some of the tree species that did not fare well. (Flowering Pear, and the Catalpa), but we also think that our lack of well-trained planting team leaders was a contributor, especially in relation to root pruning.

- We taught a pruning class in this neighborhood where some of the Elms had grown from 8 feet at planting to almost 20 feet, and the trunk diameter increased from 1 inch to close to 3 inches.

- The Tree Plotter database was still very new to us during this planting, but we have since improved our training, usage, and processes.

- We had great neighborhood participation. Neighbors met neighbors. One set of leaders continued to volunteer with TNM until just recently, and they were wonderful helping us to train and plant in other neighborhoods. They also walk their neighborhood often. If they see a neighbor outside, they will comment on their tree or offer to help and train neighbors if their trees looked like they were struggling. We think this was a major contributor to South Broadway having the highest survivability rate.

- We have improved our overall communication by completely updating our website (now found at www.treenm.org) to better cover tree maintenance best known methods, including watering. We have also improved our Facebook presence and implemented an Instagram account. We switched over to Mailchimp to reach out to tree adopters with our seasonal newsletters that contain tree maintenance recommendations and announcements for free tree pruning classes.

- We did not have many experienced planting team leaders at the beginning of our program. Now we have close to 20 trained planting team leaders. Currently our planting day events are made up of at least 10-15 teams planting 6-10 trees each to help with quality control and work balance.

- We have implemented new ways to recruit volunteers through One ABQ since this neighborhood's planting. We now have a new volunteer coordinator as well.

- Tree sizes are varied to allow a broader range of volunteers to plant.

- We now have a better process for notifying the neighborhood about the small tree giveaway using flyers. The giveaway process was still very much being created during this neighborhood's event and we did not have as big of a crowd as we had hoped for. This was the first neighborhood also where we held the giveaway after the planting, and

we saw that that worked better.

- The giveaway bare root fruit trees we experimented with did not fare well at all. We have never attempted this again since. We now giveaway only containerized fruit trees. Additionally, we try to procure self-pollinating fruit trees now, but if that is not possible, we put notifications on the giveaway flyers and tree care instructions that a partner tree might be needed for trees that are not self-pollinating.

- Rental properties are often flagged for issues of not providing consistent watering. This continues to be a challenge in all our neighborhoods. We have added having our arborists leave door cards, in addition to sending mail to homeowners with recommendations to help their trees that are struggling.

- The landscape architect did the final tree placement via the Tree Plotter app alone for South Broadway. We found that the Google satellite maps are not current enough in most cases, so now we drive through the neighborhood with the landscape architect and do the tree placement Tree Plotter mapping live.