

---

Tree New Mexico - ABQ NeighborWoods

# Final Report Barelas

**August 2021**

---



**Author:**

**Betta Eisenberg**

**Program Manager, Tree New Mexico**

**Contents**

I. Background.....page 3

II. Tree Planting .....page 4

III. Survivability.....page 6

IV. Eco Benefits.....page 7

V. Learnings and Program Improvements.....page 9

**I. Background**

The Trees and Health Study performed in 2013 <sup>1</sup> 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.

Barelas was the third 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 April 7, 2018. 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.

## **II. Tree Planting**

The Tree Canopy Percentage in Barelas was well below the Albuquerque city average, according to the

---

<sup>1</sup> Trees and Health App <http://map.treesandhealth.org/>

Trees and Health Study. <sup>2</sup> (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)

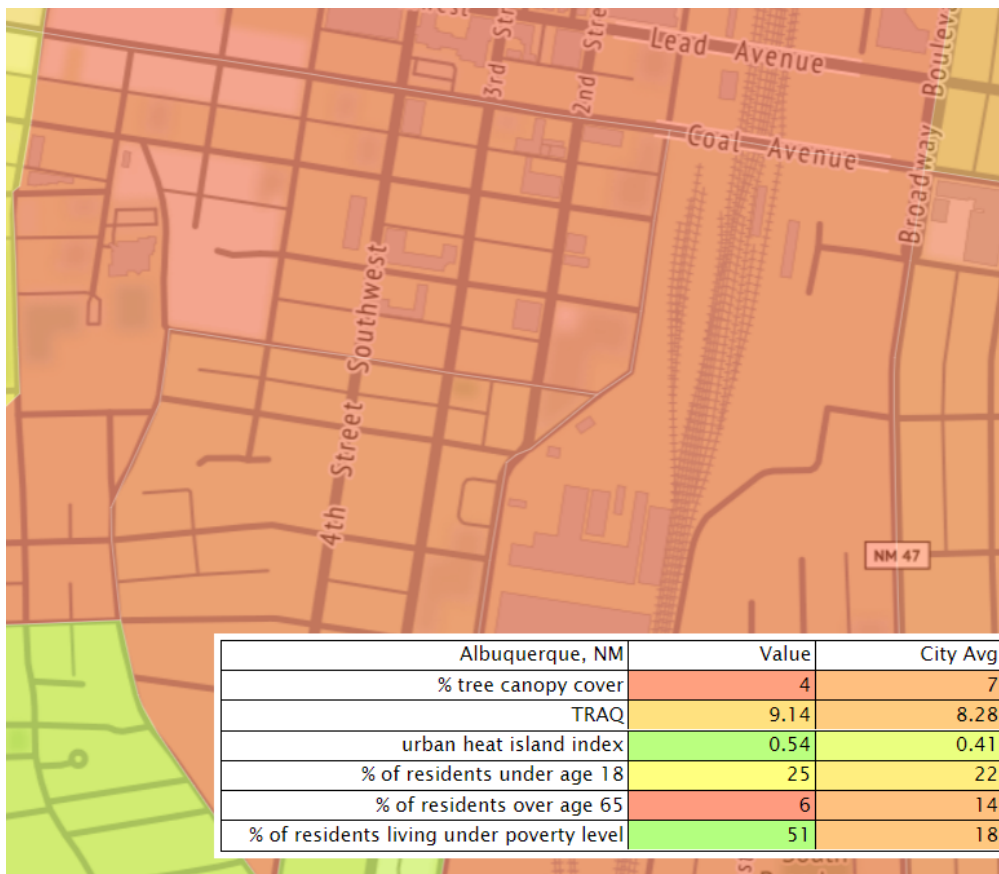


Figure 1  
Heat map of Barelas neighborhood – <http://map.treesandhealth.org/>

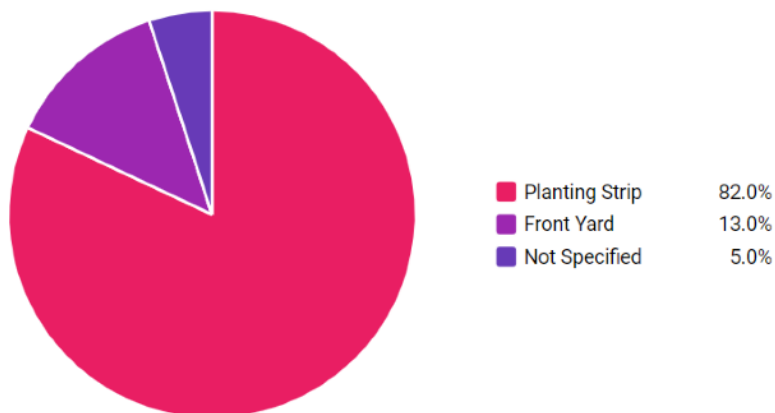


Figure 2 Barelas Growing Space - Tree Plotter App <https://pg-cloud.com/TreeNM/>

The neighborhood leaders identified the streets leading into the neighborhood from the Railyards Market

<sup>2</sup> <http://map.treesandhealth.org/>

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)

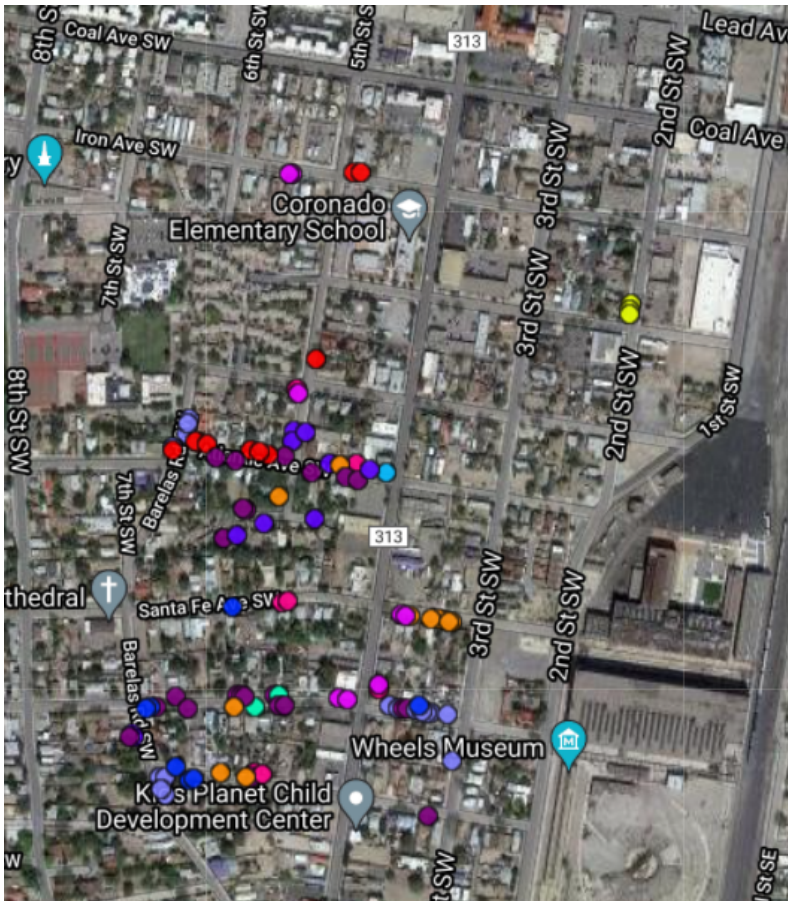


Figure 3 Barelas Planting Map – Tree Plotter - <https://pg-cloud.com/TreeNM/>

### III. Survivability

The ABQ NeighborWoods survivability goal was purposely set to a challenging 85% over three years of tracking. This summer marked the 3<sup>rd</sup> year for Barelas, and thus a thorough inventory was performed in Late May and early June of 2021. The Barelas neighborhood fell short of the survivability goal at 73%, so this was a good opportunity to see what did not work well and learn from it. (Figure 4).

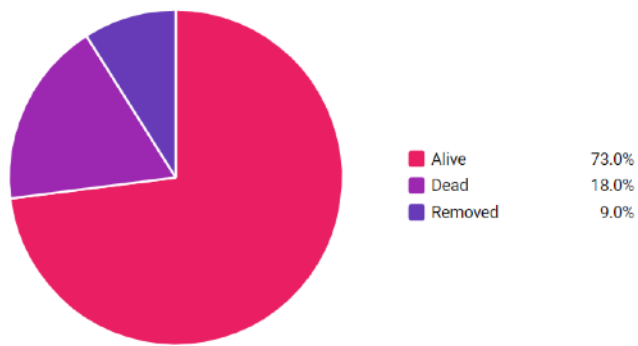


Figure 4 Barelas Overall Survivability - Tree Plotter App <https://pg-cloud.com/TreeNM/>

Mortality rates varied by species: The Elm and the Ash in addition to the Flowering Pear and the Crabapples were the most affected. The main contributor to mortality and ill health over the three-year study, especially in the larger trees like the Elms and Ashes, was reported by our arborist audits as the lack of consistent, deep, watering. Also, at this point our team leader training was only done the day of the planting. We suspect that perhaps the lack of proper root pruning may have been a contributor. Also, as we continue to learn from all our neighborhood results, we are no longer, or very rarely, plant the Flowering Pear varieties, or fruiting Crabapples as street trees. (Figure 5). Additionally, this neighborhood experienced a larger than average infestation of bag worm after the trees were first planted. Winds can blow the worms from plant to plant, which will spread bagworms quite efficiently. We notified homeowners the summer after the planting when this situation was observed. However, timing to remove and squash the bagworm while still in the bag is spring, so this may have also taken a toll on the new trees.

Most Common Species - Top 10		Species with Most Mortality - Top 10	
COMMON NAME	COUNT	COMMON NAME	COUNT
Desert Willow	23	Allee Elm	4
Frontier Elm	17	Raywood ash	4
Chokecherry	11	Crabapple	3
Allee Elm	10	Pear	2
Raywood ash	10	Desert Willow	2
Royal Raindrops Crabapple	9	Spring Snow Crabapple	2
Pear	7	Royal Raindrops Crabapple	1
Spring Snow Crabapple	7		
Crabapple	3		
Hackberry	2		

Figure 5 Barelas 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, and we also assessed 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 18 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)

Total Eco Benefits	
Overall Monetary Benefit (\$):	152
Stormwater Monetary Benefit (\$):	4
Runoff Prevention (Gallons):	832
Property Value Total (\$):	121
Energy Savings (\$):	13
Energy Saved (kWh):	161
Natural Gas Savings (\$):	9
Heat Prevention (Therms):	9
Air Quality Monetary Benefit (\$):	3
Pollutants removed (lb):	3
Carbon Monetary Benefit (\$):	2
Carbon Sequestered (lb):	291
Carbon Avoided (lb):	374

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.

<b>My Tree Benefits Wells Park</b>	<b>200 Trees After 20 Years</b>
<b>Carbon Dioxide (CO2 Sequestered)</b>	\$520.00
CO2 Absorbed Each Year (lbs)	51,860
<b>Storm Water</b>	\$260.00
Rainfall Intercepted Each Year (gal)	40,000
<b>Air Pollution Removed Each Year</b>	\$160.00
Ozone (oz)	940
Other Particulates (oz)	440
<b>Energy Usage Each Year</b>	\$9,640.00
Electricity Savings A/C (kWh)	77,800
<b>Avoided Emissions</b>	
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/](http://www.arbutustree.ca/itree-how-much-are-my-trees-worth/)

## V. Learnings and Program Improvements

- We are no longer, or very rarely, planting the tree species that did not fare well. (Flowering Pear, and Royal Raindrops Crabapples for example). The crabapples were especially susceptible to a bag worm infestation that took place shortly after planting. The greatest overall contributor to mortality however, was lack of consistent deep watering. In fact, lack of watering was the greatest factor across all the tree species where trees were struggling. On the other hand, the Hackberries looked great at the 3-year mark. We will be evaluating planting more of these in the future to increase our dataset and to see if we get similar results in other neighborhoods.
- We had great neighborhood participation. One of the leaders continues to stay in close touch with us. We recently taught a pruning class in this neighborhood where the Frontier 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.
- We have improved our communication by completely updating our website (now found at [www.treenm.org](http://www.treenm.org)) to better cover tree maintenance best known methods, including watering and also bagworms. 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. We train and mentor them over at least 3 plantings and are able to focus more on proper watering during planting, root pruning, and staking. 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.
- The landscape architect did the final tree placement via the Tree Plotter app alone for Barelás. We found though that the Google satellite maps are not current enough in some cases, so now we drive through the neighborhood with the landscape architect and do the tree placement Tree Plotter mapping live.
- 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.
- Rental properties are often challenging for 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.