Tree New Mexico - ABQ NeighborWoods

# Final Report Route 66 West

**August 2021**


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## 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, one of the highest losses in the country during the study other than cities that had experienced natural disasters like flood and tornado. In order to start replacing this lost tree canopy, the ABQ NeigborWoods Program was founded. Championed by Albuquerque City Councilor Isaac Benton, a team was formed which included other city and state partners such as ALSA members Amy Bell and Robert Loftis, New Mexico State Urban Forester Jennifer Dann, Albuquerque City Forester Joran Viers, 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 – pruning, and the Tree Plotter database are also included.

Route 66 West was the first ABQ NeighborWoods grant recipient in District 3. 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 14, 2018. The smaller trees were given away post the planting and also during National Night Out.

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

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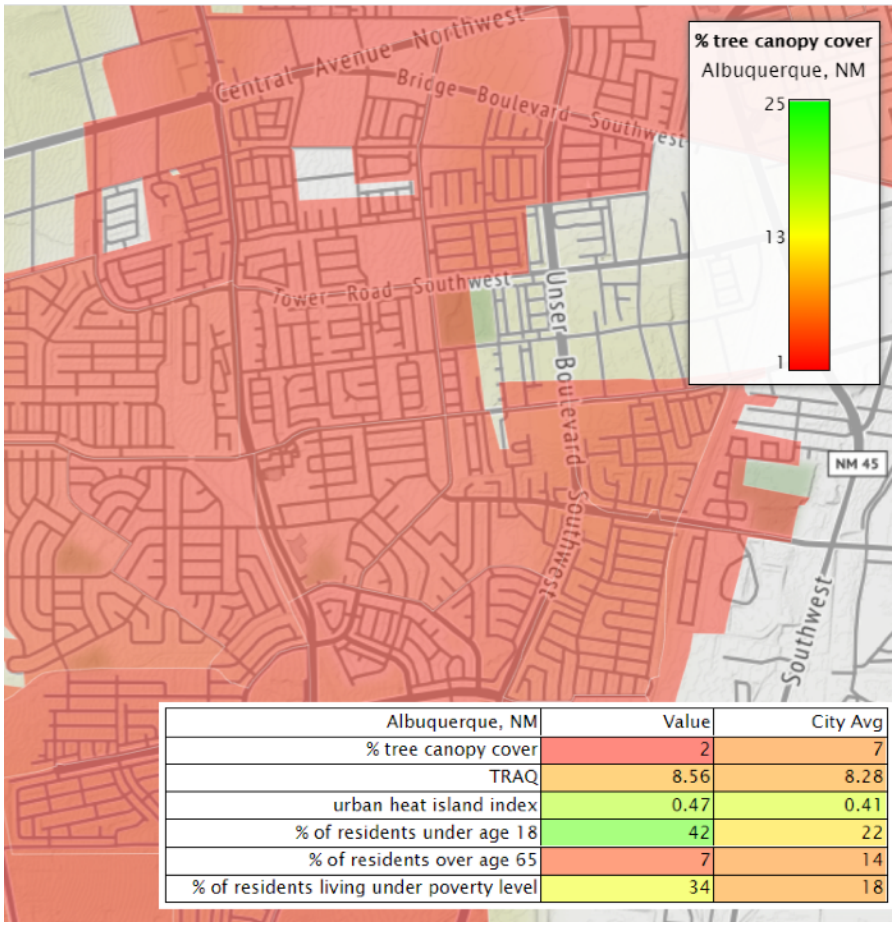
[1] Trees and Health App http://map.treesandhealth.org/

## II. Tree Planting and Survivability

The Tree Canopy Percentage in Route 66 West 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, provide the best canopy cover for the sidewalks. (Figure 2)




| Albuquerque, NM | Value | City Avg |
|---|---|---|
| % tree canopy cover | 2 | 7 |
| TRAQ | 8.56 | 8.28 |
| urban heat island index | 0.47 | 0.41 |
| % of residents under age 18 | 42 | 22 |
| % of residents over age 65 | 7 | 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/

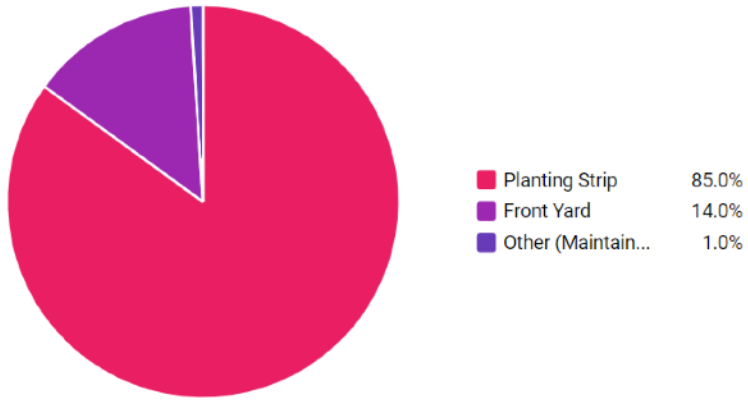



Figure 2

Rt66W Growing Space - Tree Plotter App https://pg-cloud.com/TreeNM/

The neighborhood leaders identified Paso Fino and Andalusian as the primary concentration points. They agreed to pursue adjacent streets as well.

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

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

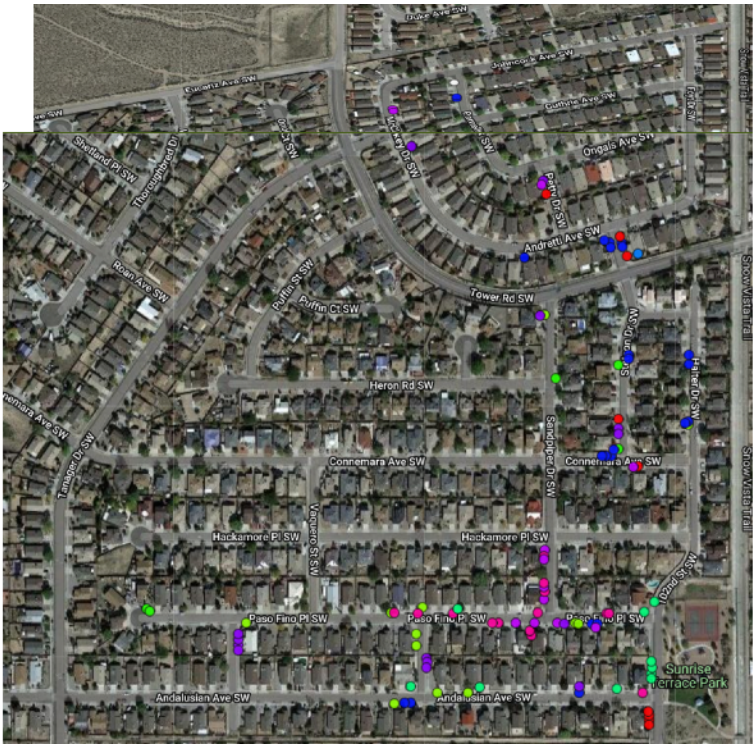



Figure 3

## RT66W Planting Map – Tree Plotter - https://pg-cloud.com/TreeNM/

The ABQ NeighborWoods survivability goal was purposely set to a challenging 85% over three years of tracking. This summer marked the 3rd year for Route 66 West, and thus a thorough inventory was performed on June 13, 2021.

The Route 66 West neighborhood fell a little short of the survivability goal at 81%, but this is still a particularly good result. (Figure 4).

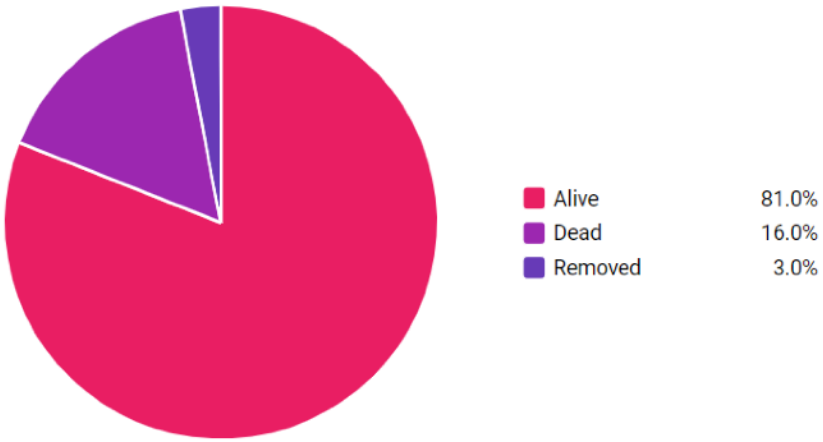



Figure 4

Rt66W Overall Survivability - Tree Plotter App https://pg-cloud.com/TreeNM/

Mortality rates varied by species: The year we planted in Rt66W was one of the driest on record for Albuquerque. The Pear, the Chokecherry, and the Royal Raindrops Crabapple were the most affected. The main contributor to mortality and ill-health over the three-year study was reported by our arborist audits as a 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 Flowering Pear varieties, the Chokecherry, or the Royal Raindrops Crabapple. Additionally, we have added proper tree care videos to our website for reference.

## Planted

## Survivability

| COMMON NAME | COUNT |
|---|---|
| Pear | 23 |
| Spring Snow Crabapple | 14 |
| Raywood ash | 14 |
| Chokecherry | 12 |
| Royal Raindrops Crabapple | 12 |
| Frontier Elm | 10 |
| Allee Elm | 9 |
| Desert Willow | 5 |
| New Mexico olive | 1 |

Species with Most Mortality - Top 10

| COMMON NAME | COUNT |
|---|---|
| Pear | 5 |
| Chokecherry | 4 |
| Royal Raindrops Crabapple | 4 |
| Raywood ash | 2 |
| Spring Snow Crabapple | 1 |

Figure 5 Rt66W Species Survivability - Tree Plotter App https://pg-cloud.com/TreeNM/

## III. Eco Benefits

As noted above, a tree inventory was completed on June 13, 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). Rt66W displayed some of the best Eco benefits of the neighborhoods audited this year.

| Total Eco Benefits | |
|---|---|
| Overall Monetary Benefit ($): | 219 |
| Stormwater Monetary Benefit ($): | 5 |
| Runoff Prevention (Gallons): | 1,092 |
| Property Value Total ($): | 179 |
| Energy Savings ($): | 16 |
| Energy Saved (kWh): | 206 |
| Natural Gas Savings ($): | 12 |
| Heat Prevention (Therms): | 11 |
| Air Quality Monetary Benefit ($): | 4 |
| Pollutants removed (lb): | 4 |
| Carbon Monetary Benefit ($): | 3 |
| Carbon Sequestered (lb): | 404 |
| Carbon Avoided (lb): | 479 |

Figure 7

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

## Eco Benefits Long Term

Using iTree, a generalized and generic 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/

## IV. Learnings and Program Improvements

- We had a very engaged neighborhood association in Rt66W and have endeavored to keep this as a core ABQ NeighborWoods tenant.

- We are no longer, or very rarely, planting the tree species that did not fare well. (Flowering Pear, Chokecherry, and Royal Raindrops Crabapples).

- Rental properties are often challenging for consistent watering. This continues to be a challenge. We have added having our arborists leave door cards, in addition to sending mail to homeowners/landlords g with recommendations to help their trees that are struggling.

- We have improved our communication by completely updating our website (now found at www.treenm.org) to better cover tree maintenance best known methods. We have also improved our Facebook presence and implemented an Instagram account. We *96+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. New ways to recruit volunteers through One ABQ, Tree Stewards, and Encore have been set up since this neighborhood's planting. We now have a new volunteer coordinator as well.

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

- The tree giveaway the weekend following the Route 66 Planting did not go as well as we had hoped, and we had left-over trees. The neighborhood asked if we could give way the rest at the National Night Out Event. Although this was effective, we found that the trees like to be planted as soon as possible, so the extra transportation, storage, and maintenance over the 3-month gap was not the best scenario for them. We have a new flyer process for the giveaway, and they are more successful the weekend following the planting event.

- The landscape architect did the final tree placement via the Tree Plotter app alone for Route 66 West. We found that the Google satellite maps are not current enough in many cases, so now we drive through the neighborhood with the landscape architect and do the tree placement using live mapping.