2022 Austin Canopy Potential

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Summary

Urban Tree Canopy continues to be an environmental goal of American cities in the 21st century. The City of Austin has stated goals that would serve to expand their urban forest with requirements of improvement to climate equity. Treecon has been tasked with assessing the potential planting space with updated 2022 data and identifying immediate actionable parcels to prioritize in future planting. With this, the city's goal of 50% canopy cover by 2050 can be realized.

The possible planting space was calculated with high precision and accuracy. Analysis was conducted concerning equity, ecological risk and planting potential contribution to provide priority parcel identification to the City of Austin. This was completed by way of a basic subjective scoring system based upon the data available.

Constraints are applied to the analysis to improve tree canopy equitability of Austin's underserved population areas by refining smaller areas of interest inside the defined Eastern crescent as well as GAVA communities which include zip codes 78744, 78745, 78752, 78753, 78759.

The results of this analysis should provide a stepping stone for more mature considerations to tackle climate equity issues for the City of Austin.

Scope

The study area is bounded by the entirety of Austin's watershed that is displayed in Figure 1 with a focus on city owned parcels, the Eastern Crescent, and GAVA.
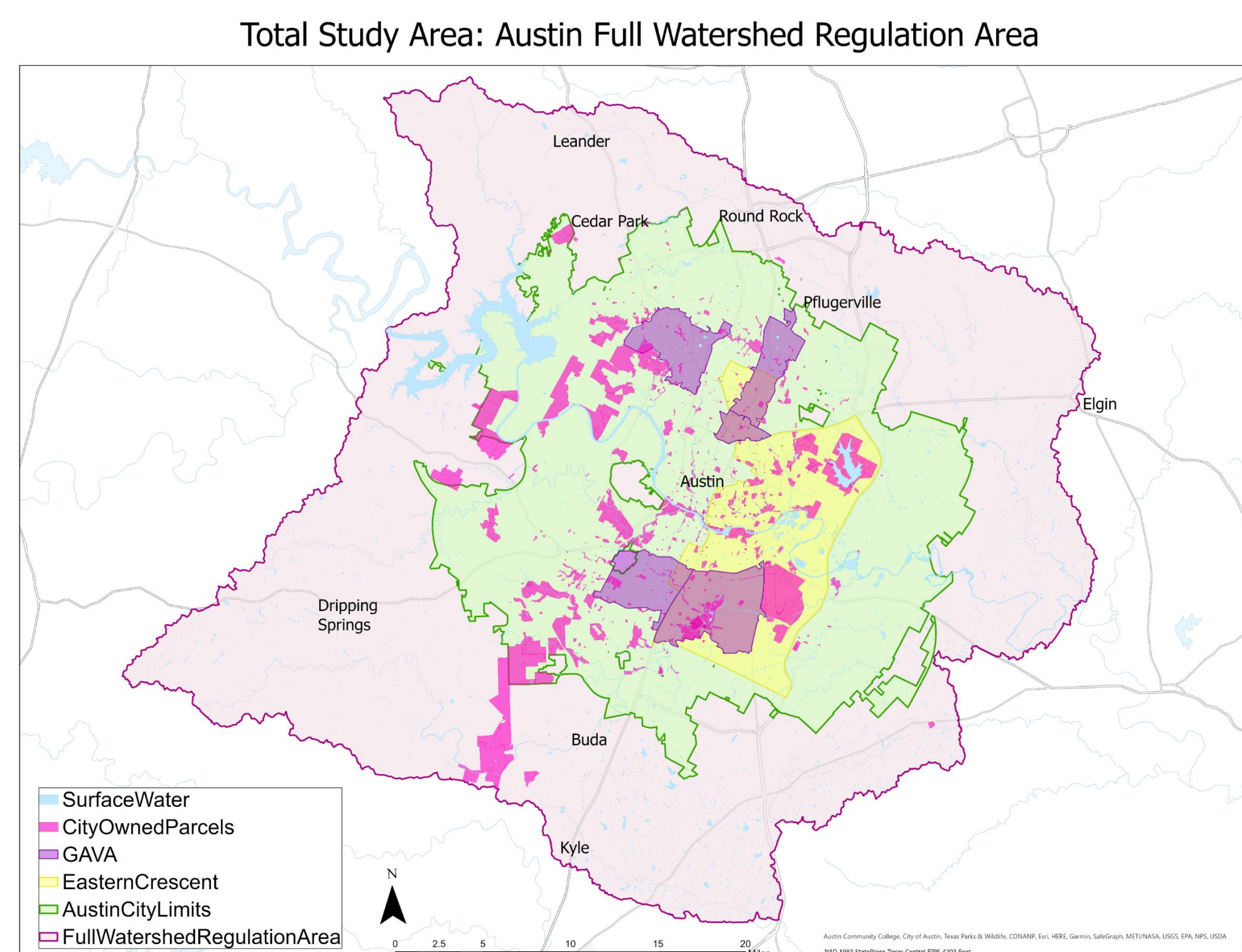
Total Study Area: Austin Full Watershed Regulation Area

Figure #1

Results

City of Austin Owned Parcel Scores

- 0.0 - 60
- 61 - 180
- 190 - 290
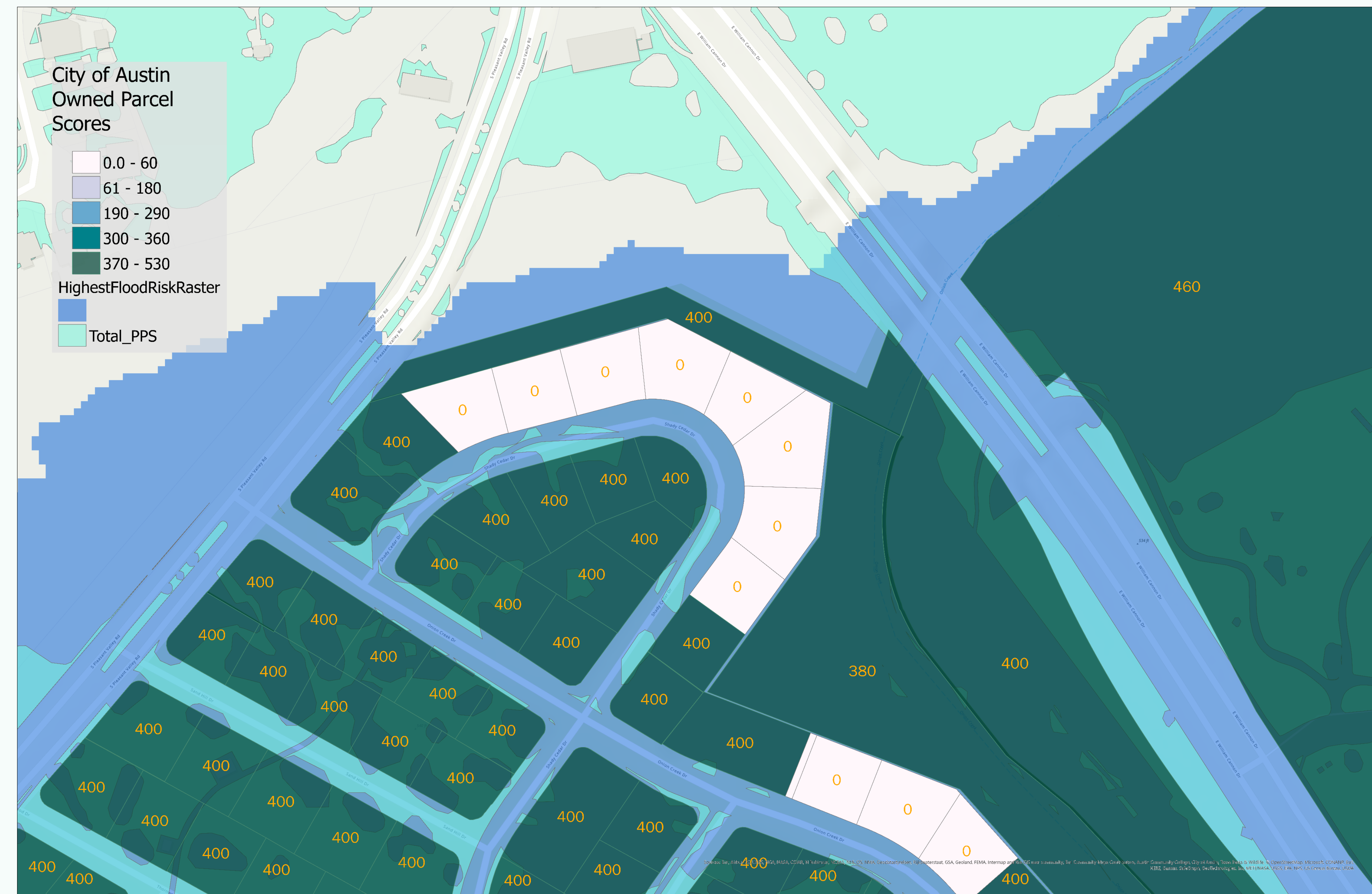- 300 - 360
- 370 - 530

HighestFloodRiskRaster

Total_PPS

Figure #2

Above map demonstrates 0 score and high score parcels compared with possible planting space layer and flood risk polygons

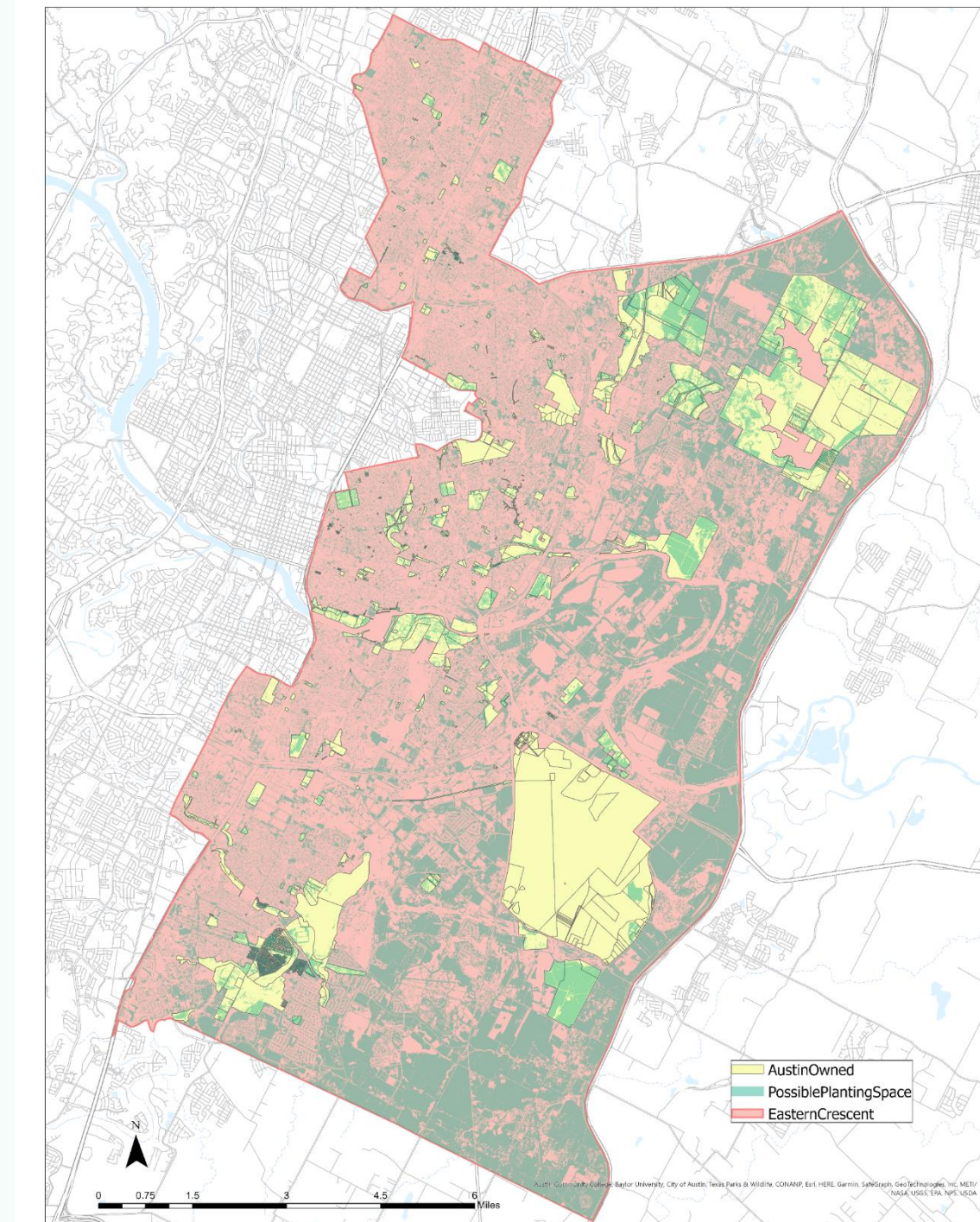Possible Planting Space Austin Owned Eastern Crescent

Figure #3

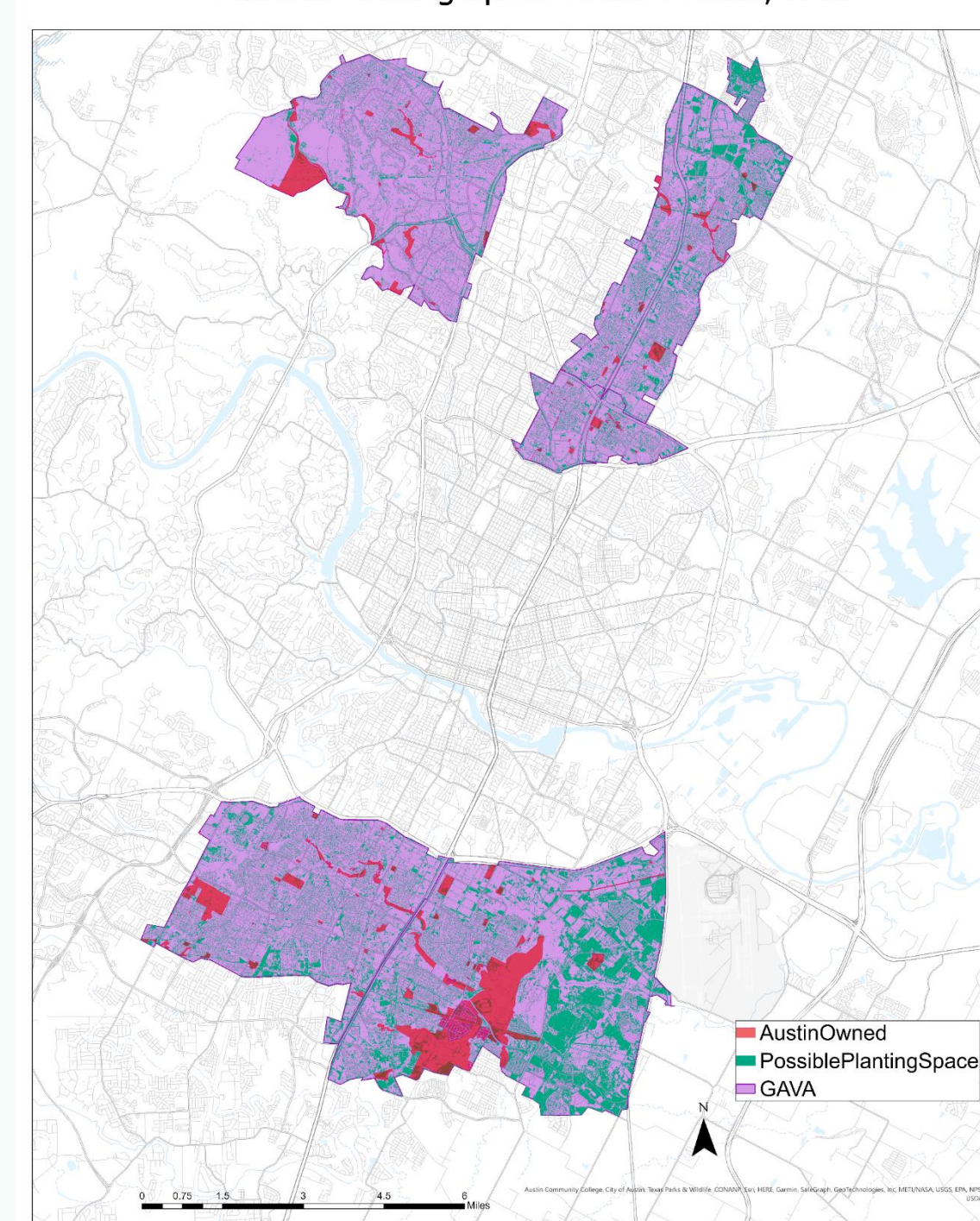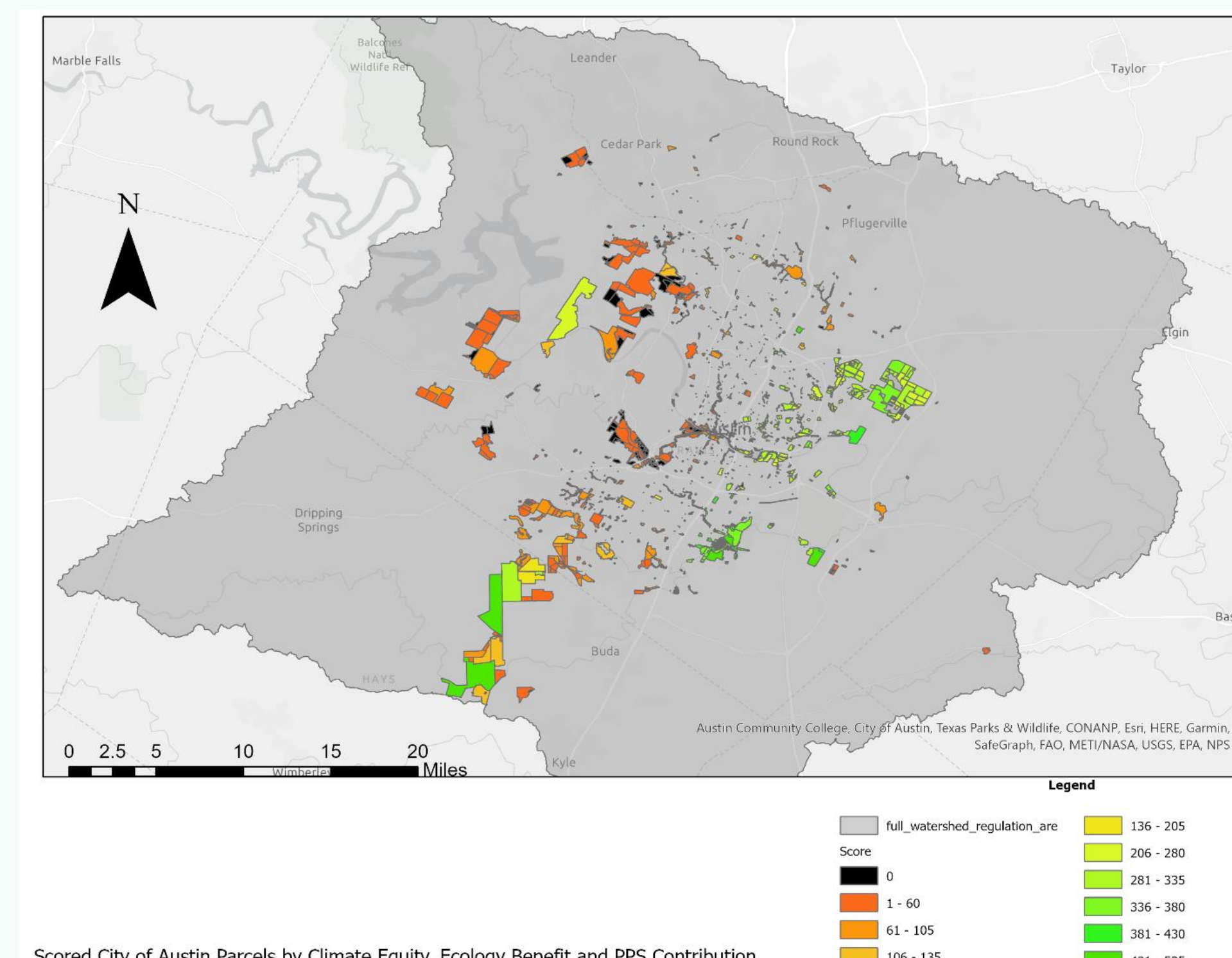Possible Planting Space Austin Owned, GAVA

Figure #4

Above maps include Austin owned possible planting space and city owned possible planting space in the Eastern Crescent and GAVA.

Scored City of Austin Parcels by Climate Equity, Ecology Benefit and PPS Contribution

Figure #5

Austin Public Parcels within the Full Watershed Regulation Area when scored by Treecon's methodology. 0 Score parcels denote that no PPS is contributable from that parcel.
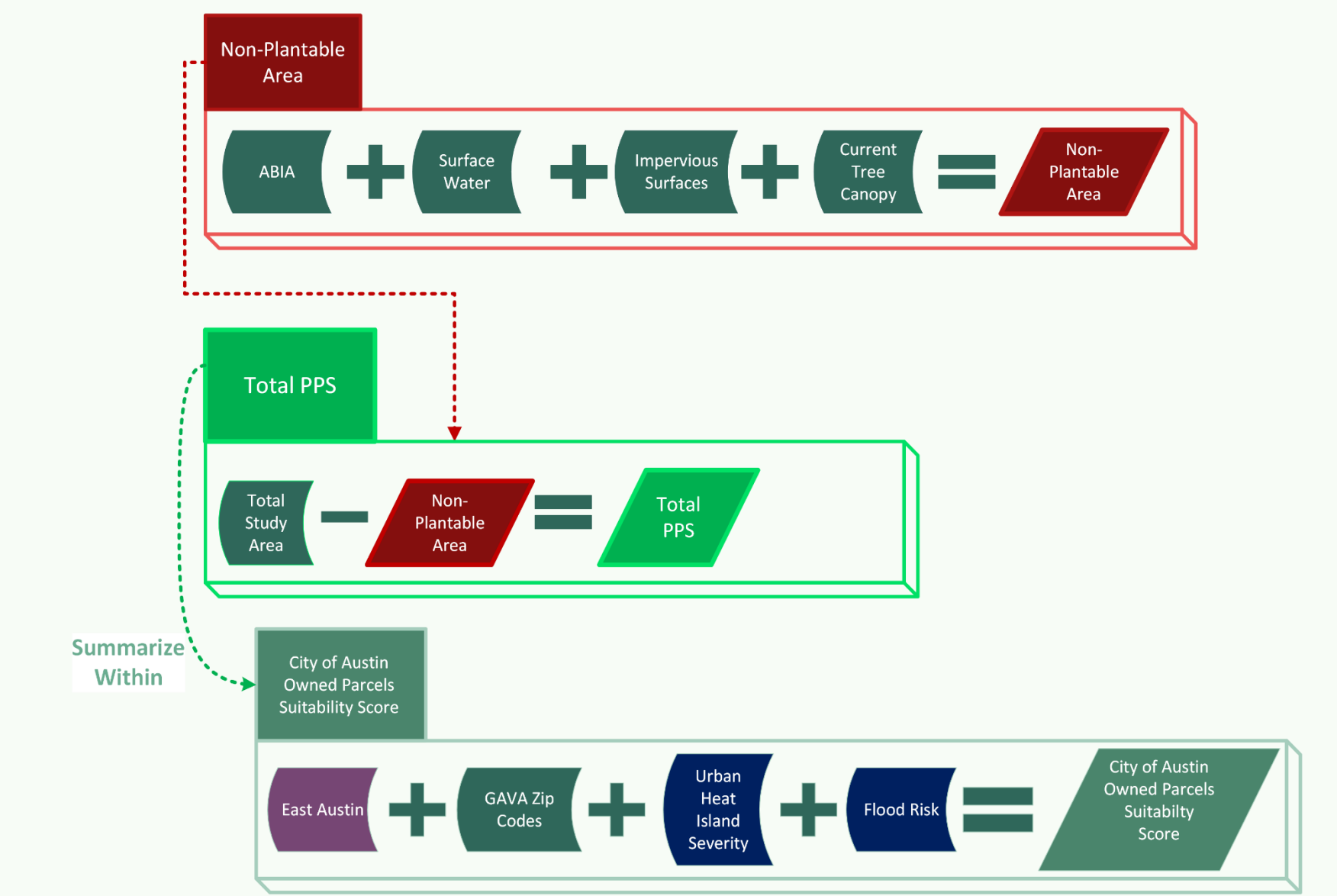
Methods

Figure #6

To develop the vector total possible planting space (PPS), we subtracted the non-plantable surface layers from the total study area. We then made new layers from the PPS layer. We made a PPS layer for the Eastern Crescent and a PPS layer for GAVA.

We made a final spreadsheet scored on factors such as equity calculated on parcel location binary scores from GAVA and Eastern Crescent locations. Ecological scores from urban heat risk and flood risk. And scores based on contributable PPS based on the proportion of parcel contribution compared to the best contributing parcel.

- Gava Zip Codes - Binary (0 or 1) * 100
- Eastern Crescent – Binary (0 or 1) * 250
- Urban Heat Risk - Intersects polygon greater than class 4 (2) * 50
- Urban Heat Risk – Intersects polygon less than class 4 (1) *50
- Flood risk withins - (2) * 25
- Flood risk intersects (1) * 25
- Summarized PPS area / highest contributable parcel * 100 = percent * 5
- Noncontributing/contributing parcels - Binary (0 or 1)
-
-
- Score Calculation : ((GAVA * 100) + (Eastern Crescent *250) + (UHR *50) + (Flood risk *50) + ([SUM PPS / Best contributing parcel]% *5)) * (Noncontributing/contributing Parcel)

Conclusions

This project identifies possible planting space that is available to become canopy in the Austin watershed area with a focus on the Eastern Crescent and GAVA. This area has been underserved so there are many areas available for improvement. Some concerns should be addressed such as areas that are identified as possible planting space but may not be ideal based on current conditions. The best possible planting spaces have been identified with regard to these conditions. Adding more to the urban tree canopy will help improve the environment.

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