

An estimate of the percentage of Tree
Canopy in the City of Sumter based on
2001 & 2007 Aerial Data.

Prepared by the Sumter City-County

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City of Sumter Tree Canopy Estimate

City of Sumter–Tree Canopy Estimate

Trees are a valuable asset to any community and are an increasingly important component of urban settings.

The environmental, economic, and social benefits of trees have been well documented.

Trees have been shown to improve air quality, reduce stormwater runoff, increase property values, and reduce energy consumption.

Trees have an aesthetic value, create a sense of place, and provide habitat for wildlife and recreational space for residents.

This estimate establishes a baseline for tree canopy in the City of Sumter. It can be used to target areas for conservation, as well as to determine locations for infill. It can also be used to assess the change in tree cover as new aerial photography becomes available.

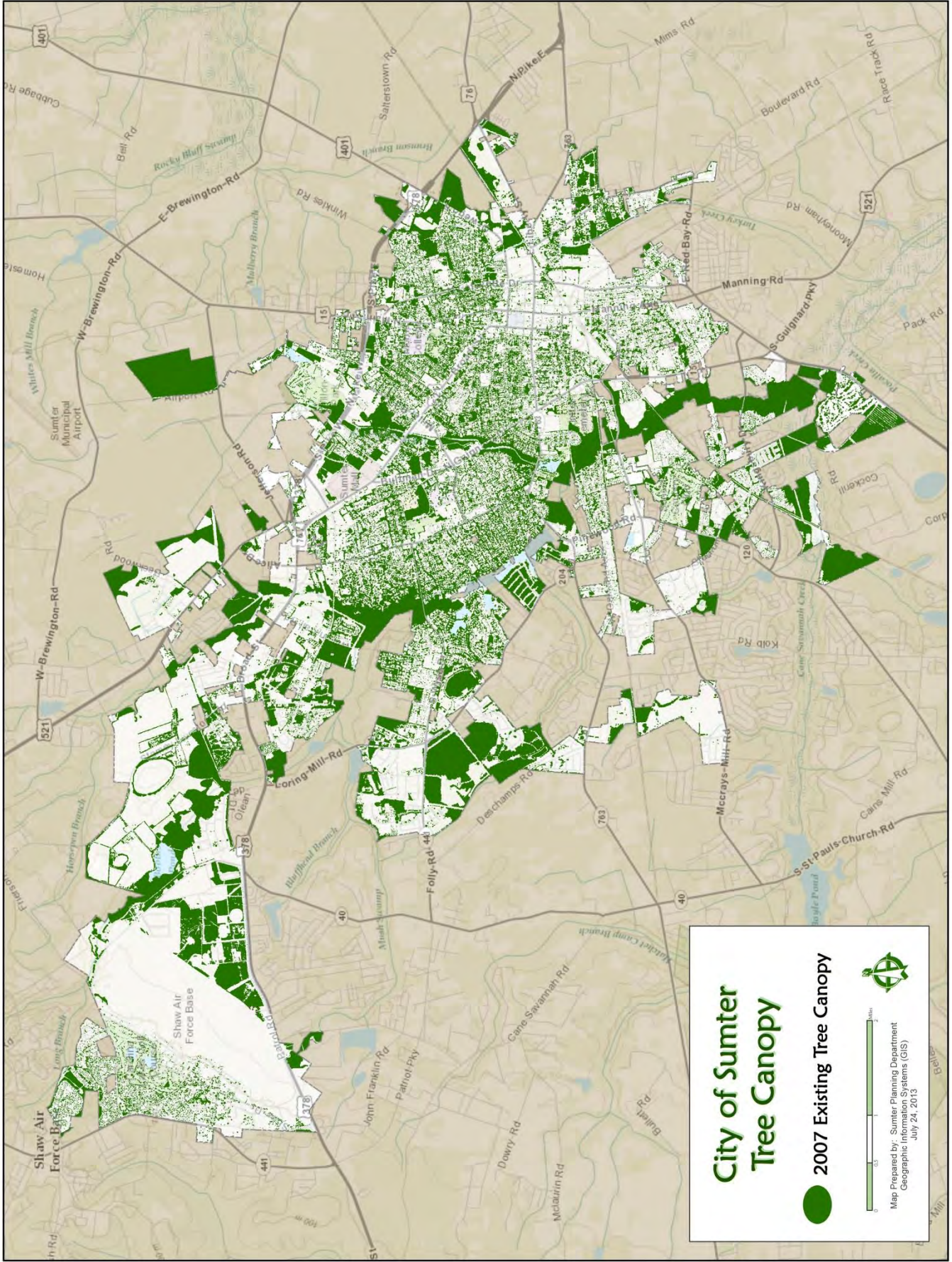


Analysis

The City of Sumter's tree canopy estimate was conducted by the Sumter Planning Department. Planning staff employed high resolution aerial photography from 2001 and 2007 to visually identify and map tree coverage within the Sumter City limits. Mapping was done using the ArcMap Geographic Information System (GIS) at scales between 1:500 and 1:1000. Staff drew circles approximating the extent of the tree canopy seen in the aerial photography. The GIS then aggregated those extents and calculated the amount of space they occupy.

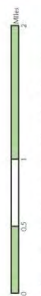


The City of Sumter stretches across **20,778.8 acres**. Staff mapped **7,882.4 acres in 2001** and **6,981.5 acres in 2007**. In 2007, tree canopy covered approximately **33.6%** of the City, down from **37.9%** in 2001. Using 2007 as a base, we find:



City of Sumter Tree Canopy

● 2007 Existing Tree Canopy

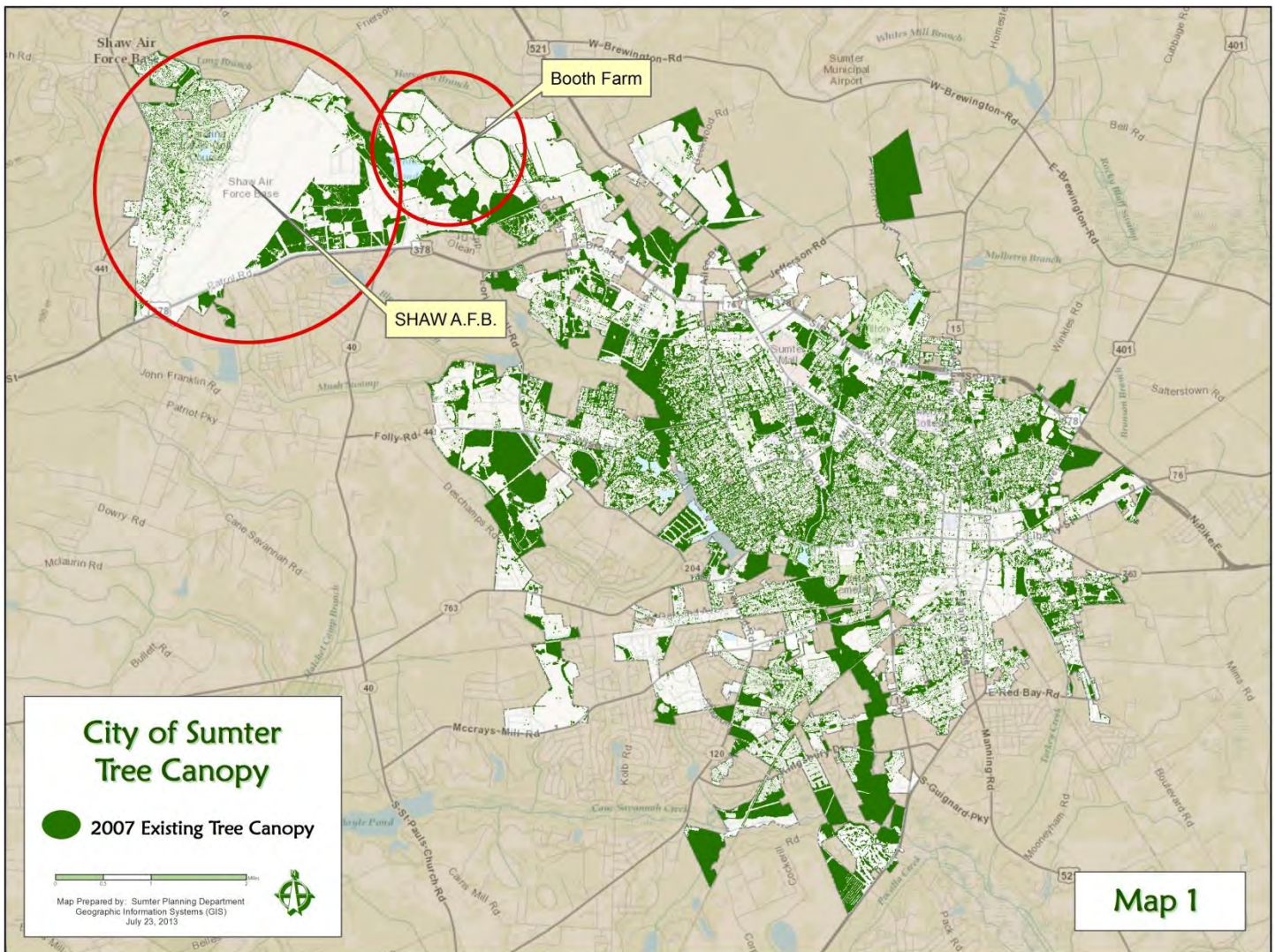


Map Prepared by: Sumter Planning Department
Geographic Information Systems (GIS)
July 24, 2013

Map 1

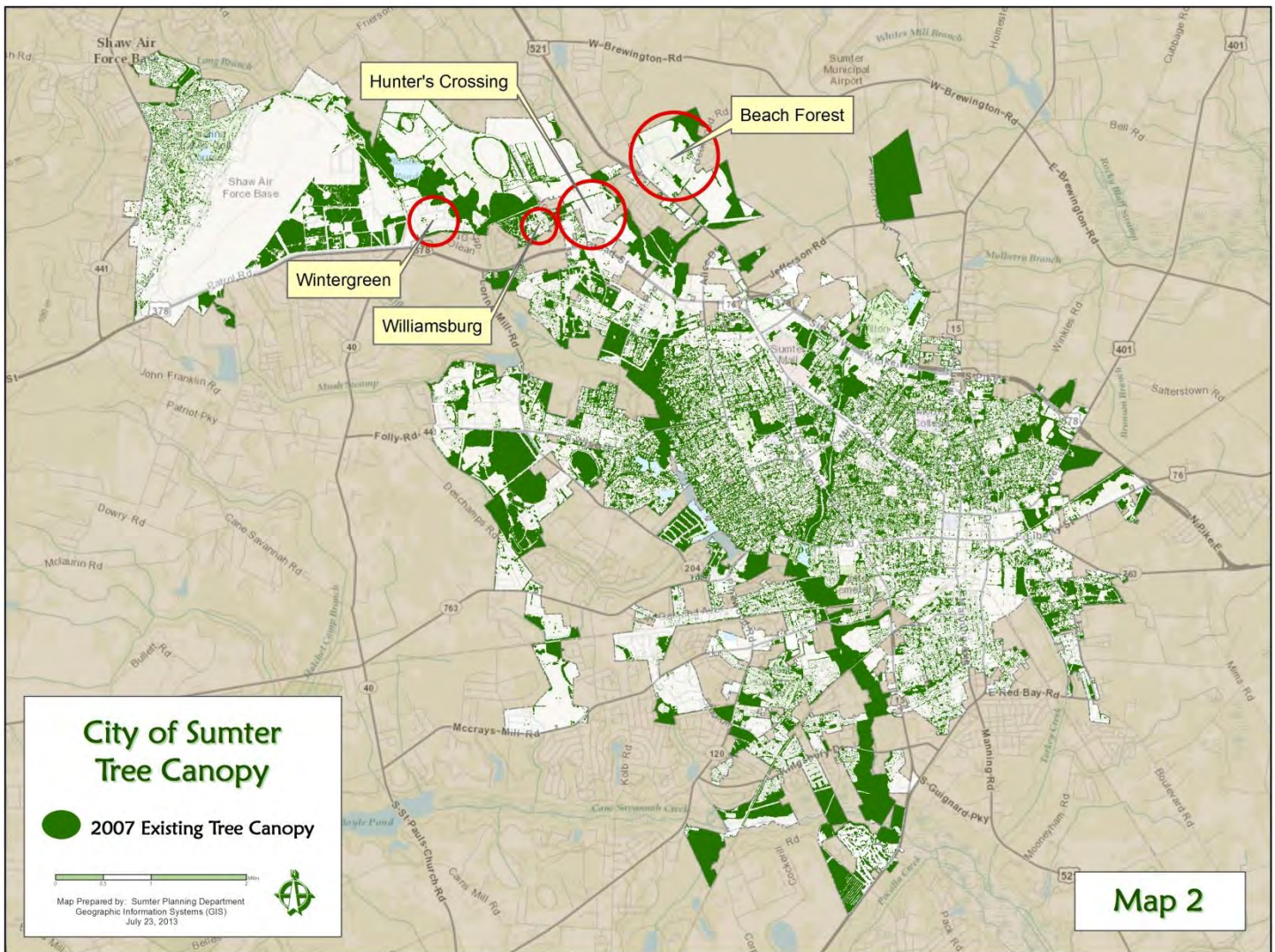
In the northwest portion of the map, we see SHAW Air Force Base and as we might expect a large portion of the base is devoid of any type of tree cover. At the center of the base, we can clearly see the runways and hangar areas. The northwest portion of the base shows a scattered canopy that surrounds the old base housing and offices, while the more densely canopied southeastern area surrounds recreational amenities. We expect to see some decrease in canopy with the addition of the Third Army and the new base housing that was built since 2007.

We can also see the Booth Farm, which lies directly east of Shaw and shows very little canopy. The large areas of densely concentrated cover on the property are primarily due to Wetland or Floodplain areas.



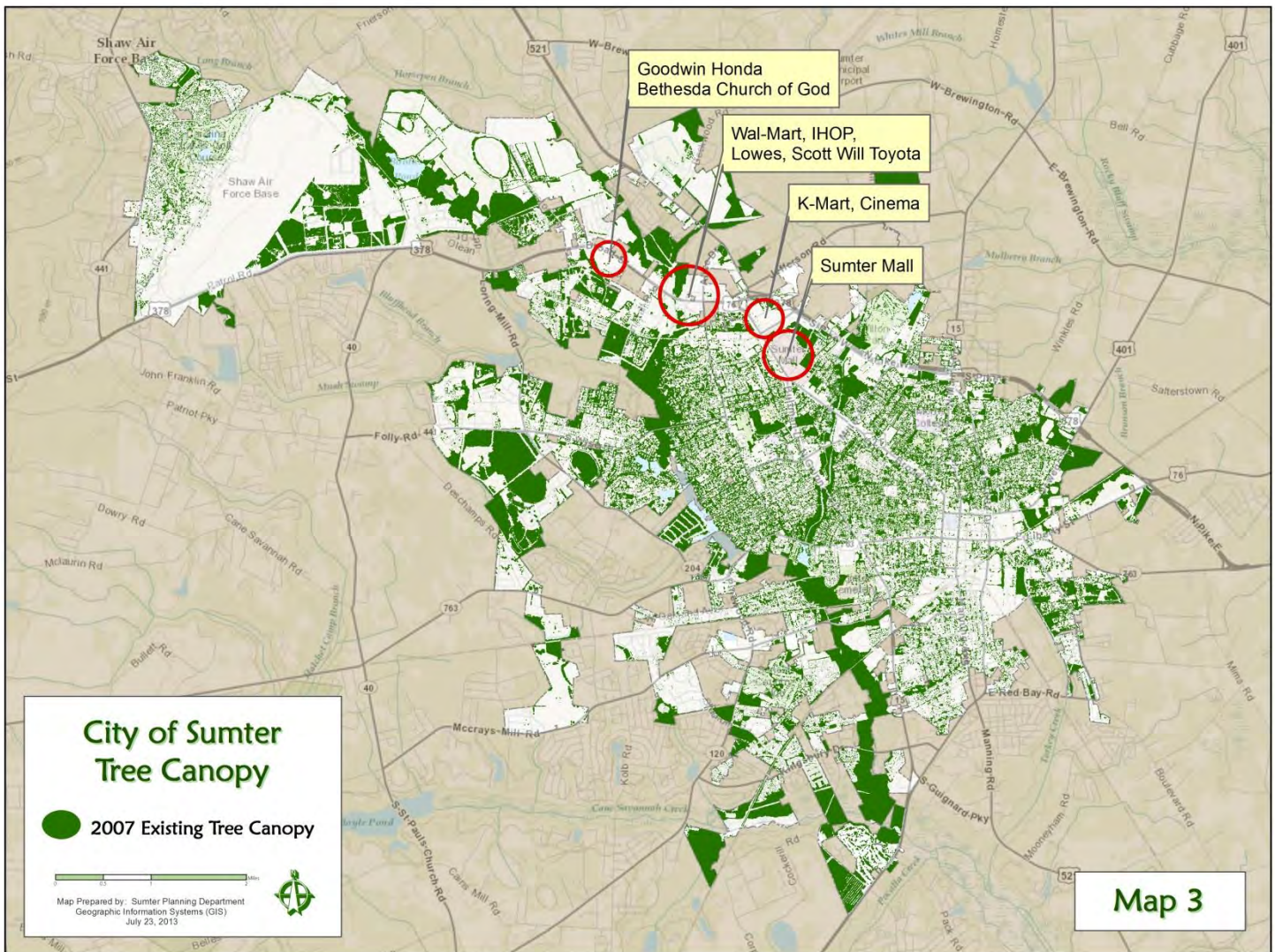
Map 2

Continuing south and east, we see more areas of minimal tree canopy. These are primarily more recently created subdivisions and newer construction. The subdivisions of Wintergreen, Williamsburg, and Hunter's Crossing all show very little canopy density. This pattern continues across Hwy 521 through the Beach Forest subdivision. Most of this construction has occurred after 2000.



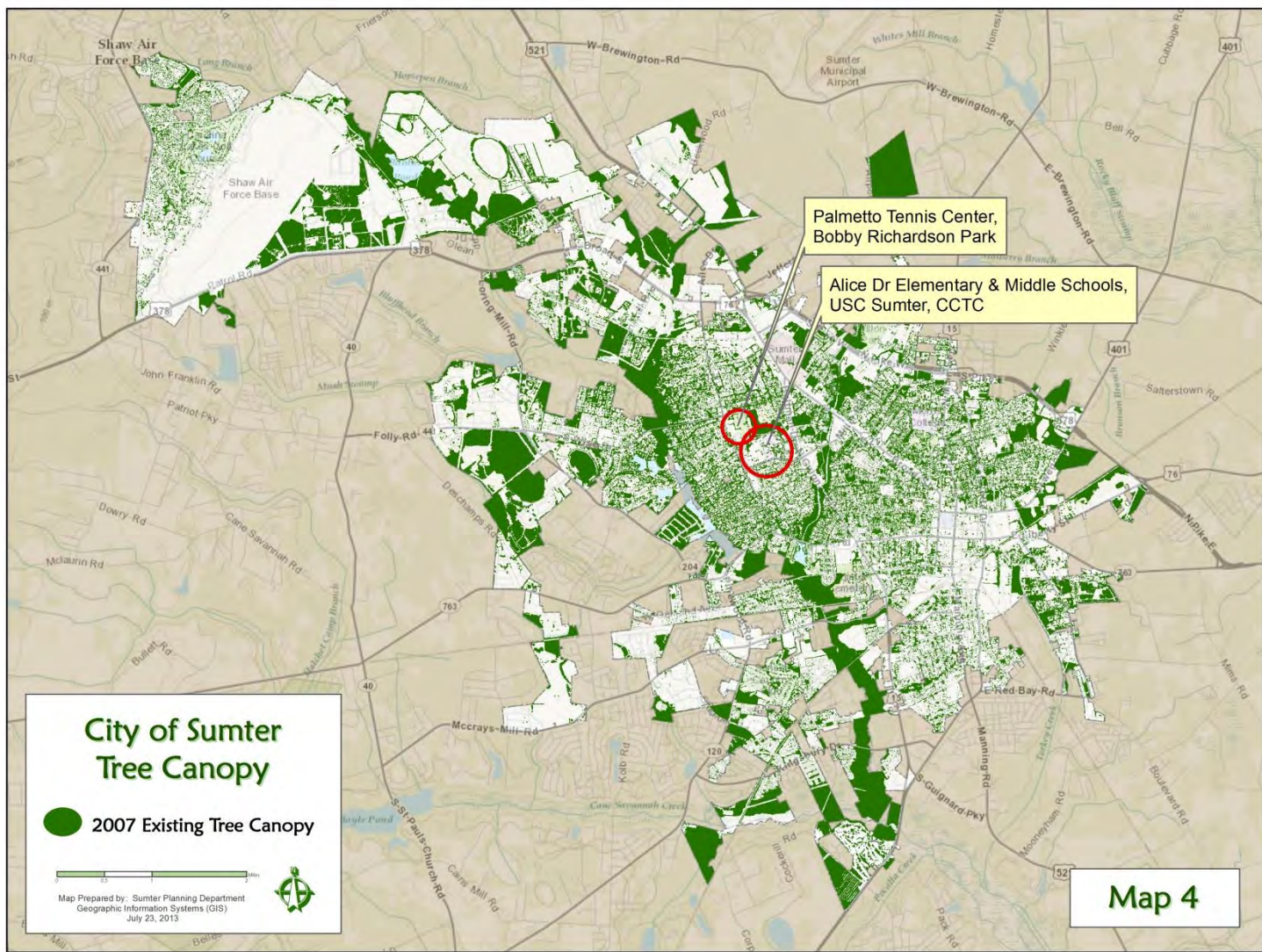
Map 3

Between Stamey Livestock Rd. and the Sumter Mall along Broad St., we also see areas with very little tree canopy. This is a heavily commercial district, which includes a number of big box stores, car lots, furniture stores, and strip malls. Businesses such as Wal-Mart, K-Mart, Lowes, Goodwin Honda, Scott Will Toyota, and a number of restaurants and hotels all reside along this corridor.



Map 4

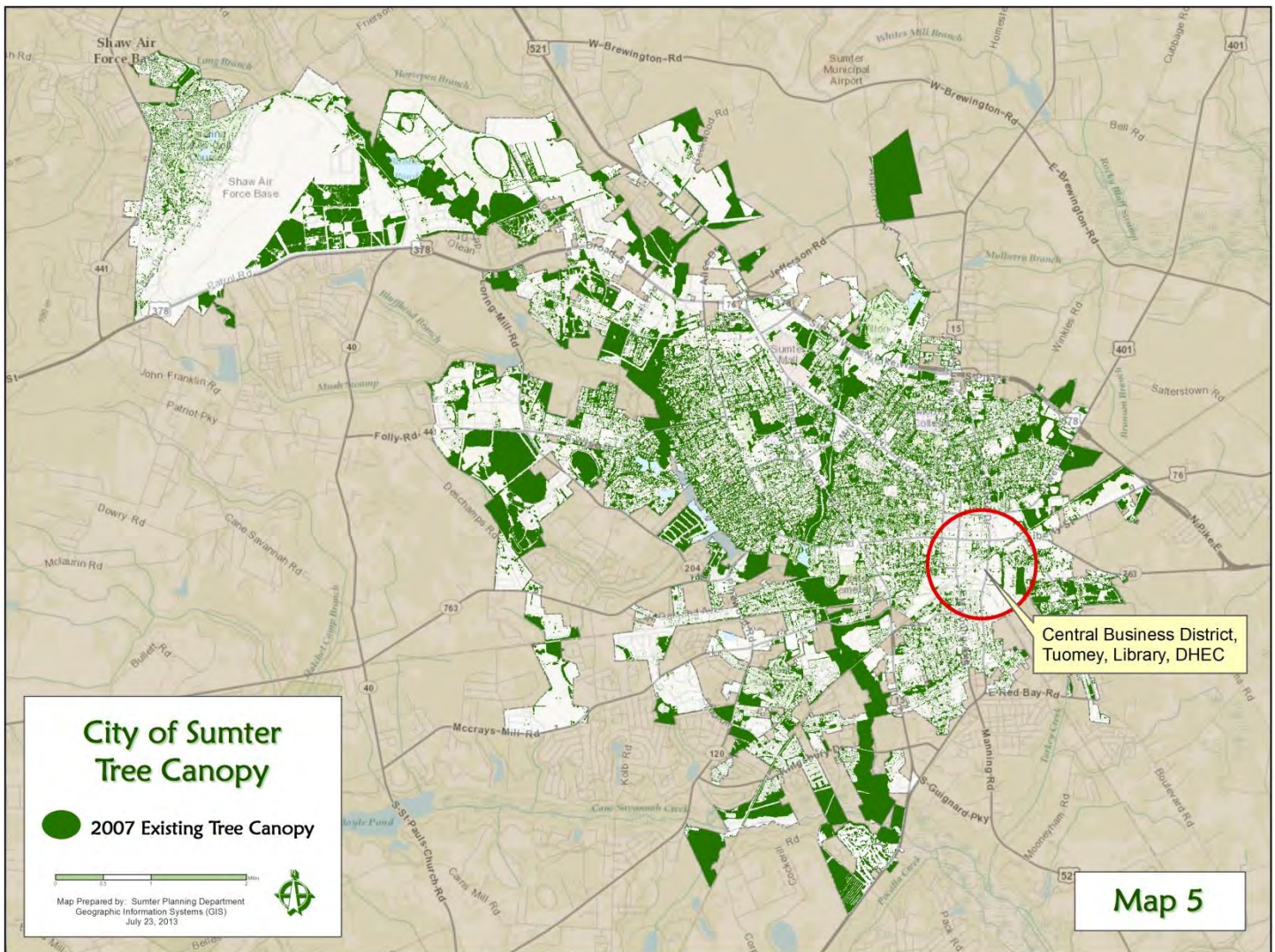
The portion of the City, below Wesmark Blvd. along Alice Dr. and Guignard Dr., shows a scattered yet relatively dense canopy, growing slightly less dense as it crosses Liberty St. and continues into the South Sumter area. This portion of the city is predominantly pre-1990 single family homes, with the exception being Alice Dr. Elementary and Middle Schools, the Sumter Tennis Center, USC Sumter and the CCTC campus. This canopy density continues across Broad St. and down until you reach East Calhoun St., where the downtown area begins. The businesses along this portion of the Broad St. corridor typically have smaller footprints than those north and west towards the base.



Map 5

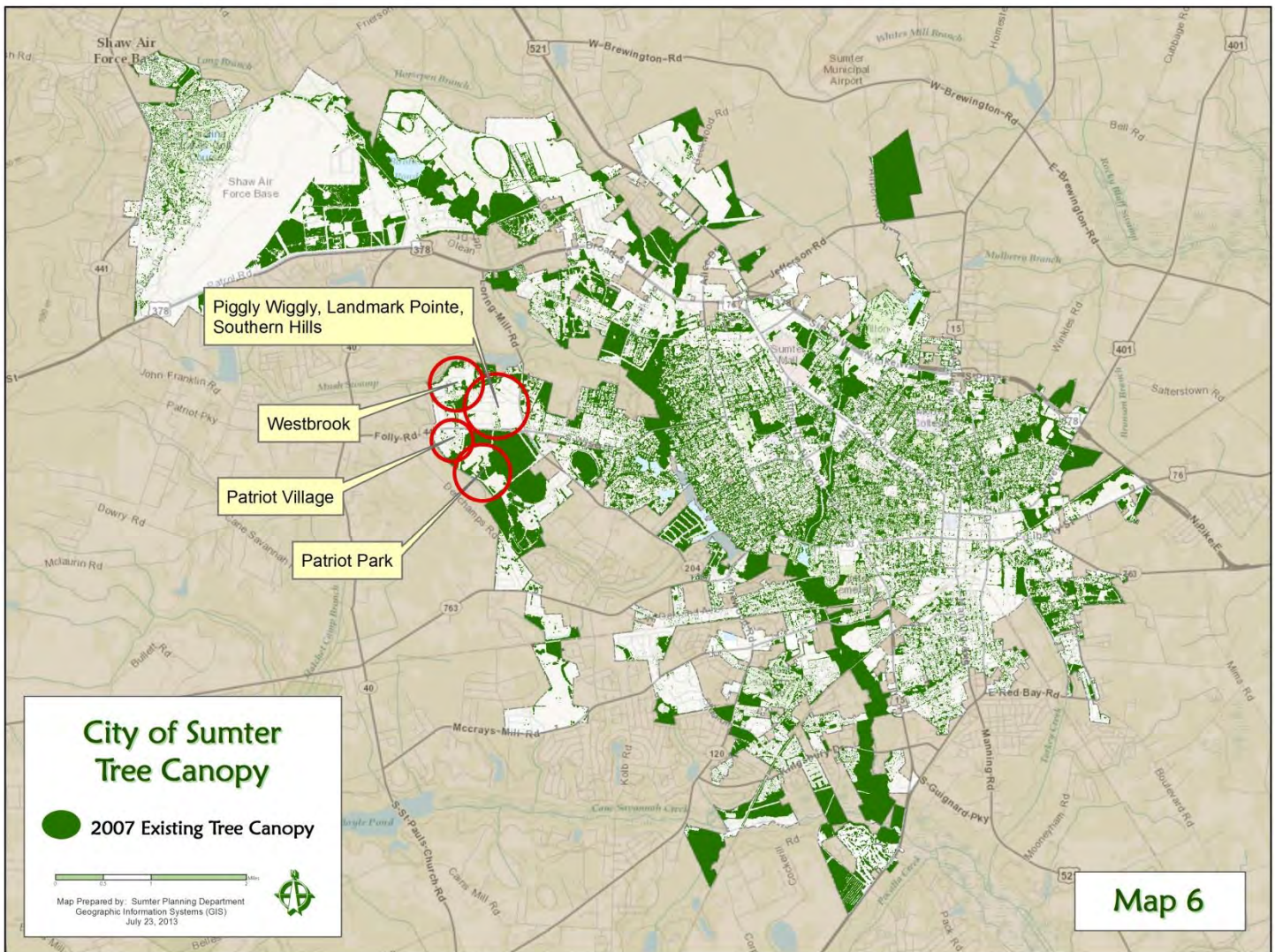
We can easily make out the downtown area which is sparsely covered and continues east and south into the more industrial portions of Sumter. The downtown includes Tuomey hospital, the Central Business District, the Sumter County Library, DHEC, the Opera House, and the Sumter County Administration Building, all of which have large impervious foot prints.

This area also includes portions of the City's industrial area along Lafayette St. and East Liberty St. and large portions of right-of-way that belong to CSX Railroad.



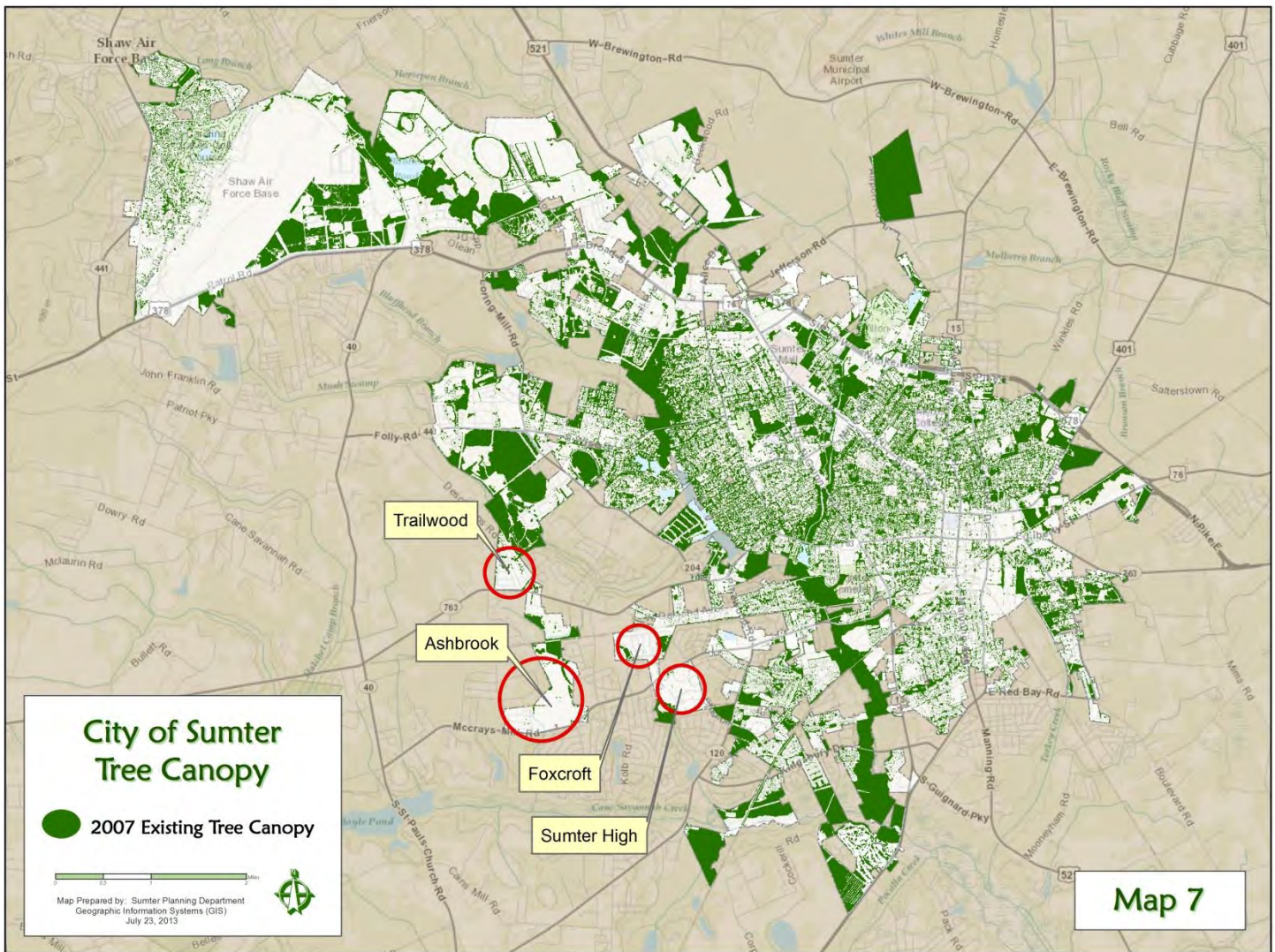
Map 6

The western-most portion of Wise Dr. shows primarily areas of minimal coverage, mainly due to newer subdivisions such as Landmarke Pointe, Southern Hills, and Patriot Village, along with the proposed Piggly Wiggly superstore site, which has not yet been developed. Patriot Park shows equal portions of open space and very dense tree canopy to the east, primarily consisting of Wetlands.



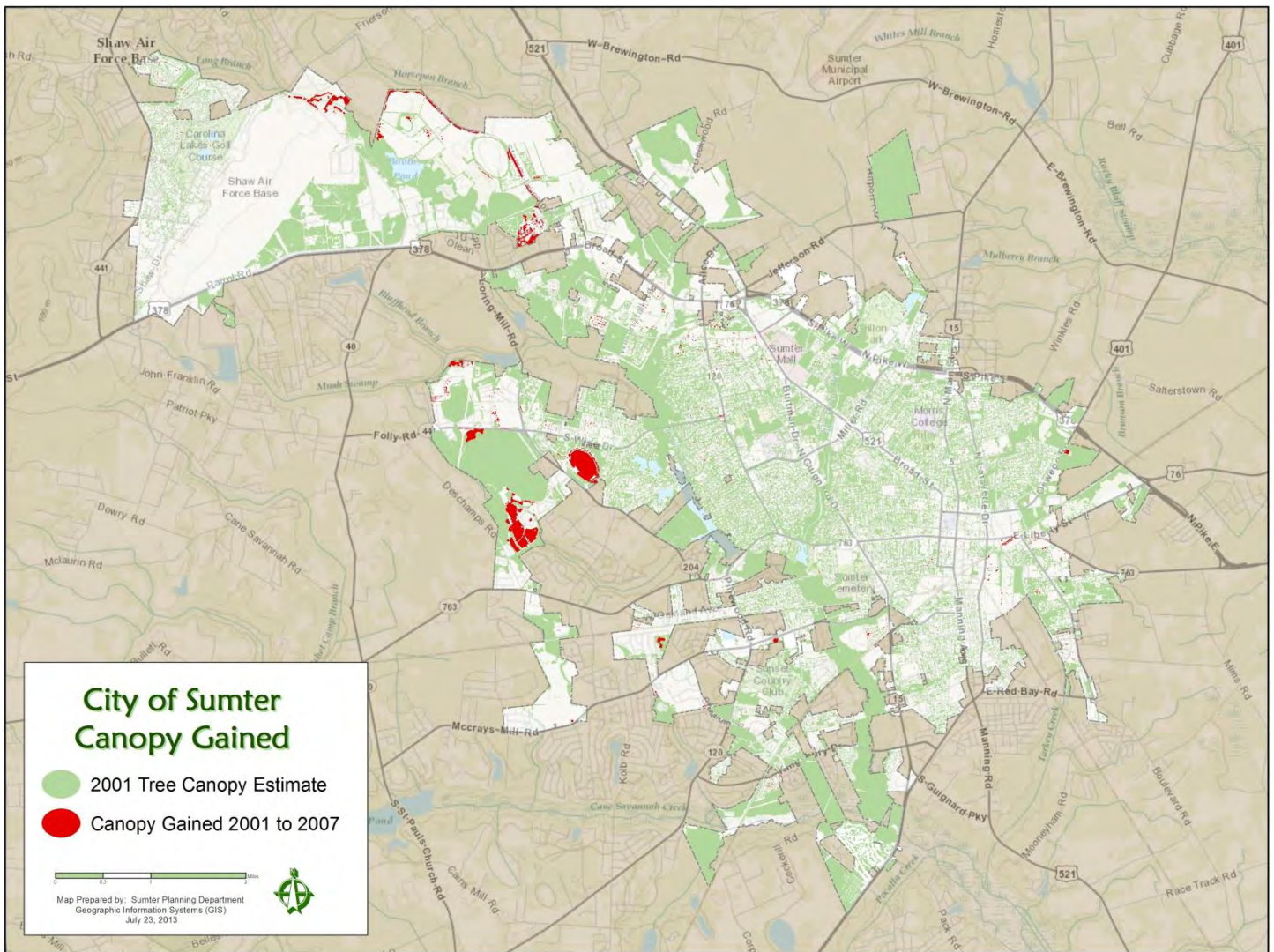
Map 7

The Southwestern portion of the City along Wedgefield Rd. and McCrays Mill Rd. shows very little infill canopy except where Wetlands and Floodplains exist. This again is mostly due to more recent subdivision development. Trailwood, Ashbrook, and Foxcroft all generally show very little tree canopy. This area also consists of Sumter High School, another relatively canopy free property.



Comparison: Canopy Gained 2001 to 2007

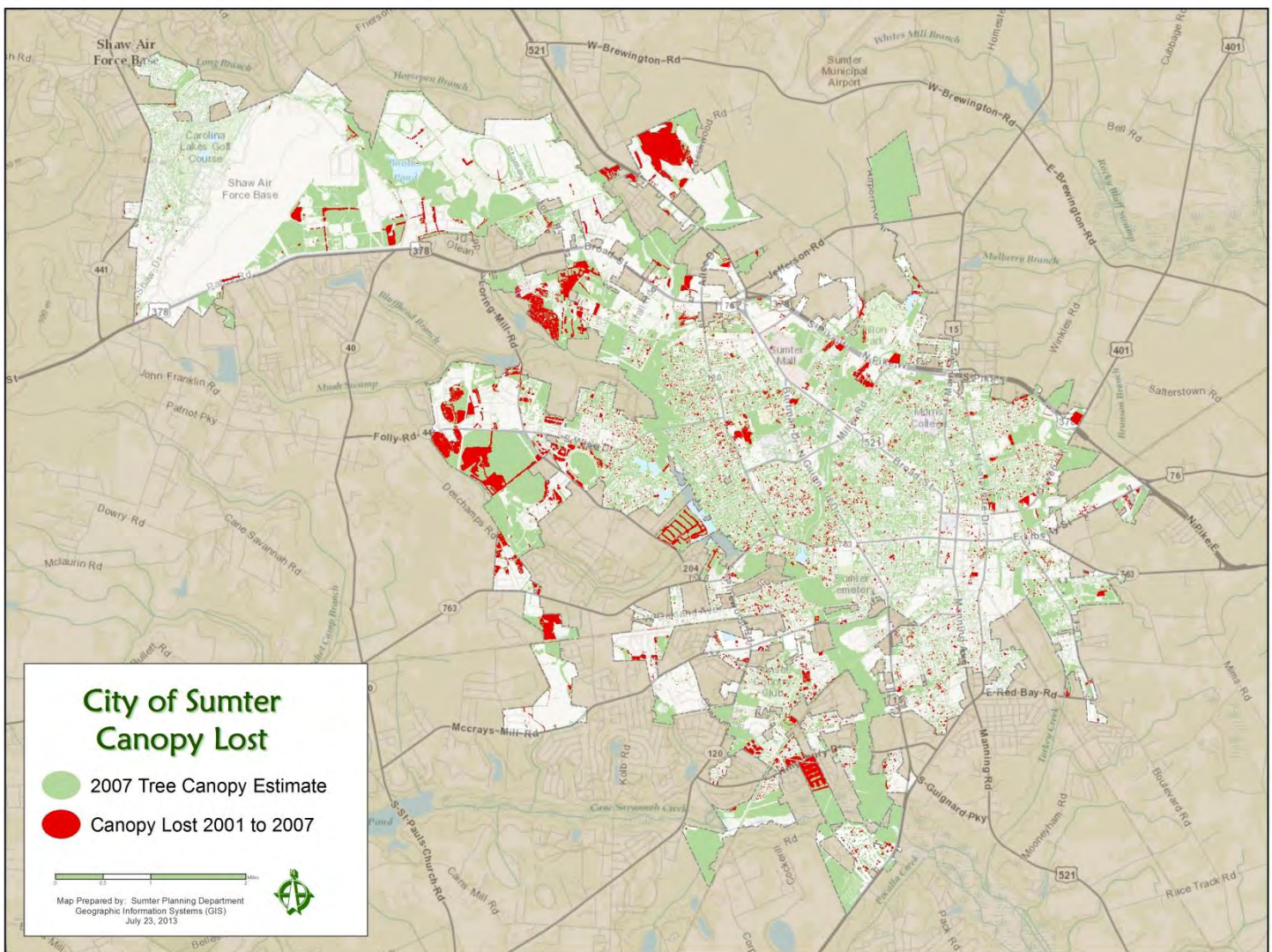
In a six year span we can see that there has been some significant canopy growth in some areas of the City, specifically along Stamey Livestock Rd. and a portion of the Wintergreen subdivision, which was originally cleared for new home construction and has now regrown where the lots remain undeveloped. We also see growth in Carolina Bay #40 between Loring Mill Rd. and South Wise Dr. Finally, east of Deschamps Rd., we see another area that was cleared for new home construction in the Timberline Meadows subdivision that has since regrown.



Comparison: Canopy Lost 2001 to 2007

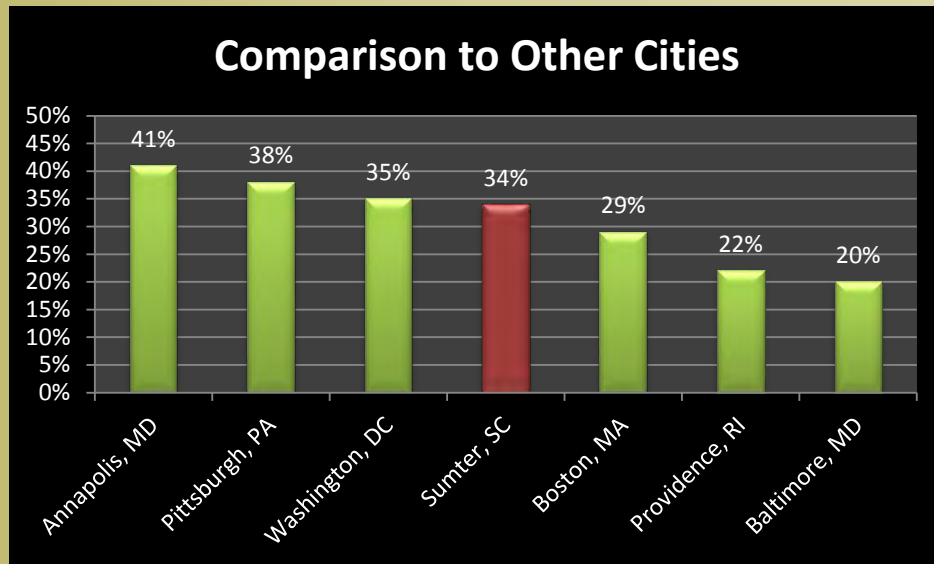
In those same six years we can see that there were many more areas that lost canopy in the City. Many of these places have already been documented in previous maps, but a number of other locations have also been brought to light. Specifically, the Knight's Village subdivision along Kingsbury Dr., the street layout for the Cove subdivision along Loring Mill Dr., and the Wolf Street Green apartments along Wall St.

All told, tree canopy in the City diminished from 7,882.4 acres in 2001 to 6,981.5 acres in 2007, which amounts to a loss of 900.9 acres, or a little over 4.3% of the total City canopy.



Conclusion

Below is a chart, compiled by the Maryland Department of Natural Resources, showing the percentage of tree canopy in selected Cities. We have inserted Sumter for comparative purposes.



A number of major factors prevent the city from having a higher percentage of tree canopy; Shaw AFB with its large runway requirement, the large farms at and around the Booth property, newer subdivisions, strip malls and big box stores along Broad St. north of Miller Rd., schools, and the downtown and nearby industrial areas. This condition can be addressed through new planting programs, the strengthening of landscaping requirements, and careful, conservation design approach to development.

Fortunately for the city's tree canopy inventory, a significant amount of acreage is tied up in Wetlands and Floodplain areas. Also the city's older residential core, along Broad St., Alice Dr., and Guignard Dr. has an above average amount of canopy(40%) compared to the rest of the city. Overall most of the more urbanized areas, minus the downtown area, have better canopy coverage than the more recently constructed subdivisions(18.1%).

The Planning Department is currently awaiting the delivery of 2013 aerial photography, which will be mapped as well. Already we have seen the change between 2001 and 2007, and we will be able to compare to the 2013 photography after it has been digitized. Recognizing that new subdivision creation and new home construction has diminished significantly since 2007, we can expect to see a much lower rate of change between 2007 and 2013 than we did between 2001 and 2007, when a large number of new subdivisions were created and land was cleared.
