



2022 Canopy Coverage Report

Process

The City of West Fargo, along with the rest of the Fargo-Moorhead metropolitan area local governments, contracts with Aerial Imagery and LiDAR acquisition vendors every three years. Part of the required deliverable is a LiDAR LAS dataset which meets or exceeds the standards outlined in the USGS-NGP LiDAR Base Specifications, Techniques and Methods 11-B4. The resulting LiDAR collection produced a LiDAR point cloud of an Aggregate Nominal Point Density (ANPD) of greater than or equal to four points per square meter or less than or equal to one-half meter Aggregate Nominal Point Spacing (ANPS). Once the data has been received, the City of West Fargo GIS department is able to use the LiDAR LAS or point cloud data to extract the vegetation classes to determine total urban canopy cover within our current city limits. The City GIS Department uses ArcGIS Pro to process the data. The change LAS Class Codes Tool was used to ensure that only the Low, Medium, and High Vegetation classes are singled out. The LAS Height Metrics Tool was then set to establish a minimum height of 6.56 feet, which was the default, a minimum points per cell to 4, and a cell size of 5 feet for the resulting tree canopy raster, which is created using the Mosaic to New Raster Tool. Any cells that are erroneously classified as vegetation, such as overhead powerlines are manually reclassified. Finally, the Clip Raster Tool is used to exclude data outside of our city limits. The final raster can then be used to calculate the City's overall urban tree canopy coverage, which amounted to 7.41%.

Change

The City of West Fargo, in the spring of 2018, produced "West Fargo 2.0". It is a planning document that addresses the existing community and the principles of planning and design, as the city grows and moves forward. That planning document used GIS data to estimate that, at that time, the canopy coverage was 2.7 percent. Comparing that to the 2022 data (7.41%) and the City of West Fargo has had a canopy coverage change of 4.71 percent growth. That has included the planting of several major corridors, greenspaces and boulevards.

Future

The City's Forestry Department will work with the City's GIS Department to update this Canopy Coverage Report on a regular basis. The Forestry Department can then use that report to analyze canopy coverage.

