

5. ERU CALCULATION

Single-Family Residential (SFR) Parcels

The most recent aerial imagery for Cleona Borough was produced in 2016. This imagery was provided to Steckbeck Engineering & Surveying by the Lebanon County GIS Department. Tax parcel information including property owner, situs address, tax parcel number, and land use code were also provided and were current as of May 30, 2017.

The Lebanon County Assessment Office assigns a land use code to every parcel based on the primary use of the parcel. A copy of the codes used is provided in Appendix A. All parcels having the “Residential 1 Family (101),” “Condominium (Fee Simple) (107),” and “Mobile Home (108)” land use codes were designated single family residential (SFR) for the purposes of this rate study. A total of 836 parcels had one of these three land use codes and were designated SFR.

A sample of 42 of these parcels (5.0%) was randomly selected to be analyzed for their impervious area coverage using the random number generator in Microsoft Excel. Once these parcels were selected, the impervious coverage of each was manually traced using ArcMap GIS Software. The high-resolution aerial images were used to determine which parts of the parcel were impervious. In accordance with Article II of the Lebanon County Stormwater Management Ordinance, impervious surfaces included “roofs, additional indoor living spaces, patios, garages, storage sheds and similar structures, streets, sidewalks and vehicle and pedestrian areas that are gravel and crushed stone.” Many older properties have property lines that extend to the centerline of what are now public roads. The portion of public road situated within the property lines were excluded in the impervious area calculations for the purposes of the fee study. A sample impervious area calculation map is presented in Appendix B, and the impervious areas of each of these parcels are also tabulated in Appendix B. An initial mean and standard deviation were calculated for this data. Outliers more than two standard deviations away from the mean were removed and the mean was recalculated. This adjusted mean was computed at 2,242 square feet (sf) and rounded up to 2,500 sf as the final ERU value for Cleona Borough properties.

Western Kentucky University conducted a nationwide study of stormwater utilities in 2011. The study identified 1,174 stormwater utilities nationwide, of which at least 610 (or 52%) were ERU-based fee structures. The average ERU for these ERU-based fee structures was 2,957 square feet with a standard deviation of 1,559 square feet. At 2,500 square feet, Cleona Borough Authority's ERU is slightly below average but is still well within the range of one standard deviation of the national average ERU cited in the Western Kentucky University study.

A flat rate is to be established for all detached single-family residential lots that have one of the three (3) requisite land use codes. As stated above, there were 836 such parcels in Cleona Borough at the time of the analysis. This number can be expected to vary over time although seeing the Borough is relatively built out and barring change in land use from residential to nonresidential, the change is expected to be minimal. For the purposes of this rate study, it is assumed that the 836 ERU figure for single-family residential lots will remain constant during the next five (5) years.

Non-Single Family Residential (Non-SFR) Parcels

All parcels with land use codes other than 101, 107, and 108 were determined to be Non-Single Family Residential parcels. A total of 61 Non-Residential parcels were designated in Cleona Borough. Impervious area delineations and calculations were completed for each of these properties in the same way that the impervious area calculations were performed for the sample of residential properties. The total impervious area on a non-SFR parcel was divided by the defined impervious area per ERU and then rounded up to next whole number to determine the number of ERUs to assign to the parcel. For example, take a hypothetical parcel with 40,600 square feet of impervious area. Dividing the 40,600 square feet figure by 2,500 square feet per ERU yields 16.24 ERUs for the property, which are rounded up to the next whole number or 17 ERUs.

In all likelihood, there are parcels in the Borough with no or very little impervious area and it seems unreasonable to assess these lots a fee. To address this situation, only parcels with greater than or equal to 300 square feet shall be assessed a fee.

ERU calculations for all non-SFR properties in Cleona Borough are tabulated in Appendix C, and a sample impervious area calculation map is presented in Appendix C. In total, the 61 non-SFR properties account for 741 ERUs.

As with the total number of SFR ERUs, the total number of non-SFR ERUs can also change over time, and although nothing significant is expected again due to the fact that the Borough is nearly built out, business needs can change over time. Businesses might elect to make site improvements such as a building addition or a parking lot expansion for example resulting in increased impervious area and consequently increased ERUs.

The total number of ERUs including both SFR and non-SFR ERUs in Cleona Borough as of May 30, 2017 is displayed in Table 2, below.

Table 2: Cleona Borough Authority ERUs

Parcel Category	Number of Parcels	Number of ERUs
Single-Family Residential	836	836
Non-Single Family Residential	61	741
Total	897	1577