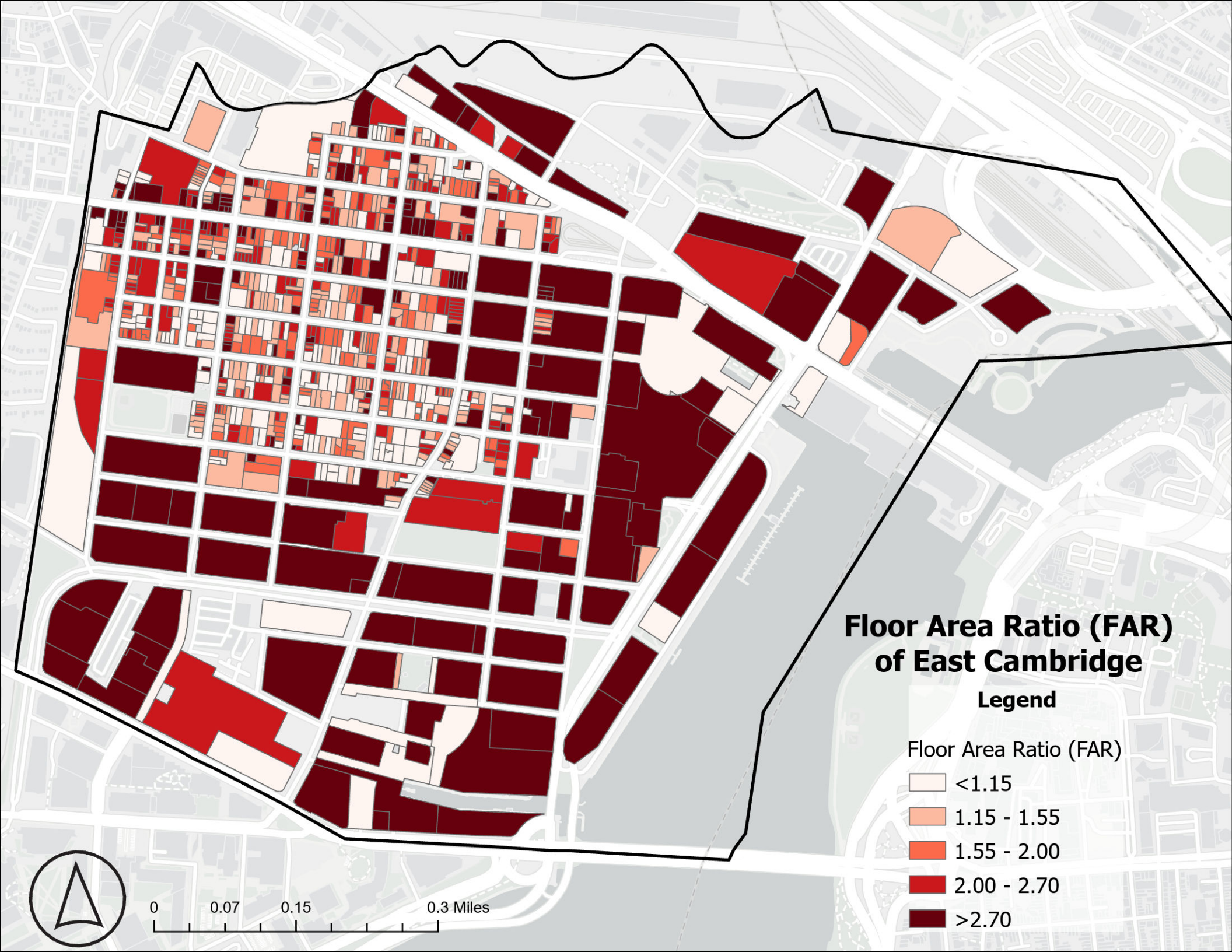
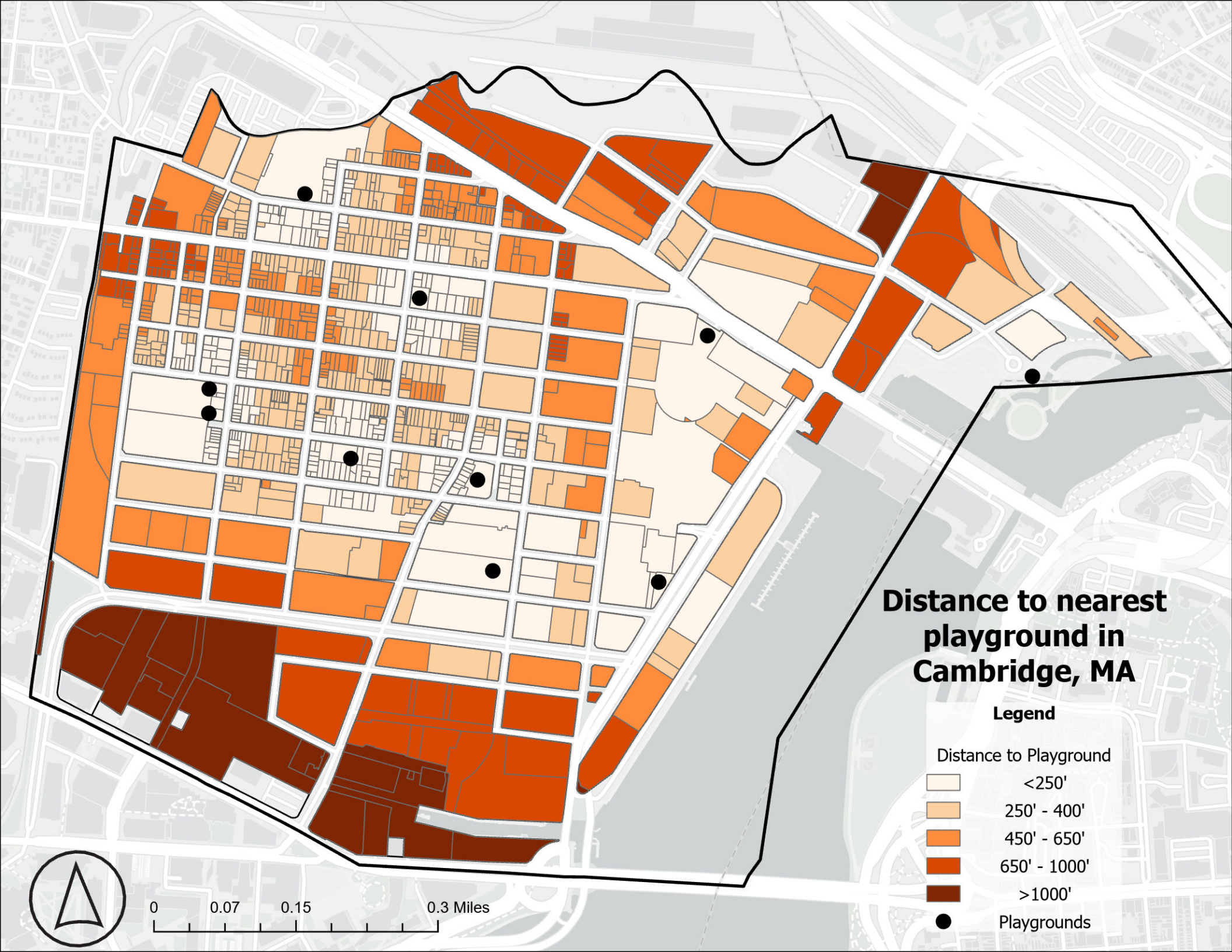

Floor Area Ratio (FAR)
of East Cambridge
Legend
Floor Area Ratio (FAR)
<1.15
1.15 - 1.55
1.55 - 2.00
2.00 - 2.70
>2.70
0
0.07
0.15
0.3 Miles

Land Use Types by Acreage and FAR in East Cambridge

Land Use Type	Frequency	Acres	Average FAR
Assisted Living/Boarding House	1	0.12	2.22
Charitable/Religious	11	2.35	4.60
Commercial	30	17.28	3.36
Education	2	2.17	2.43
Education Residential	1	2.34	1.21
Government Operations	14	16.26	3.08
Health	1	0.92	1.37
Industrial	10	6.11	3.51
Mixed Use Commercial	7	4.29	6.14
Mixed Use Residential	75	22.53	3.67
Office	46	40.84	5.86
Office/R&D	19	23.02	7.09
Privately-Owned Open Space	3	2.13	0.05
Public Open Space	24	24.53	0.34
Residential	741	61.73	1.78
Transportation	25	16.29	1.49
Utility	6	9.03	3.14
Vacant Commercial	11	10.11	0.70
Vacant Residential	7	0.64	4.20


Distance to nearest playground in Cambridge, MA
Legend
Distance to Playground
<250'
250' - 400'
450' - 650'
650' - 1000'
>1000'
Playgrounds
0
0.07
0.15
0.3 Miles

Average distance to nearest playground by land use type in Cambridge, MA

Land use type	Average dist. to playground (ft)
Assisted Living/Boarding House	592.87
Charitable/Religious	342.29
Commercial	581.06
Education	483.19
Education Residential	650.96
Government Operations	839.08
Health	449.78
Industrial	436.38
Mixed Use Commercial	454.68
Mixed Use Residential	490.89
Office	638.25
Office/R&D	668.79
Privately-Owned Open Space	1011.39
Public Open Space	246.78
Residential	371.11
Transportation	695.14
Utility	676.96
Vacant Commercial	588.96
Vacant Residential	270.81

Kellan Stanner

Professor Heris

Intro to GIS

14 November 2024

Workflow for Assignment 6

Task 1

1. Download Land Use, Neighborhood Boundaries, and Building Layers from source.
2. Project map to UTM 18N.
3. Use “Select by Location” to filter out parcels and buildings for a particular neighborhood. Save as new layers.
4. Convert these layers to geodatabase.
5. In the Building layer, add fields for “Bldg_UniqID”, “Footprint”, “Bldg_Floors”, and “Total_Floor_Area”
    1. Calculate Bldg_UniqID using ObjectID.
    2. Calculate geometry for Footprint.
    3. Calculate Bldg_Floors by dividing - (TOP_GL / 11).
    4. Calculate Total_Floor_Area by multiplying - (Footprint * Bldg_Floors)
6. Remove superfluous data - filter for all structure types except BLDG or Bldg_Floors = 0 and delete.
7. In the Parcels layer, add fields “Parcel_UniqID” and “Parcel_Area”
    1. Calculate Parcel_UniqID using ObjectID.
    2. Calculate geometry to fill Parcel_Area.
8. To rectify the issue of buildings that cross parcel boundaries, intersect the two layers.
    1. Repair geometry.
    2. Recalculate geometry for Footprint.
    3. Recalculate Total_Floor_Area by multiplying - (Footprint * Bldg_Floors).
9. Use “Summarize” to aggregate individual building segments by parcel.
    1. Statistics field: Total_Floor_Area - Sum; Case field: Parcel_UniqID
    2. Set save location for DBF (standalone table).

10. Join standalone table to Parcel layer by Parcel_UniqID
11. Create new field “FAR" and calculate by dividing - (Total_Floor_Area / Parcel).
12. Map FAR with graduated symbology.
    1. Use quantile breaks. Manually adjust intervals to nearest whole integer or .5 or .05 decimal.
    2. Add legend, scale, title and north arrow.
13. Create the requested table
    1. Add field “Acres” to the Parcel layer. Calculate geometry and change unit from feet to acres.
    2. Summarize:
        1. Statistics field: Acres - Sum;
        2. Statistics field: FAR - Mean
        3. Case field: Category
    3. Export with .csv extension and format.

Task 2

1. Download Land Use, Neighborhood Boundaries, and Playgrounds layers from source.
2. Project map to UTM 18N.
3. Select by location and create new layers with playgrounds and land use parcels for only the selected neighborhood.
4. Spatial Join these layers:
    1. Target feature: Parcels
    2. Join feature: Playgrounds
    3. Join operation: one-to-one
    4. Match option: closest
    5. Distance field name: Dist_to_plgd
5. Symbolize with graduated symbology by field “Dist_to_plgd”
6. Create the requested table using Summarize

1. Statistics field: “Dist_to_Plgd” - Mean
2. Case field: Category
3. Export with .csv extension and format.