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# -*- coding: utf-8 -*-
"""
Created on Thu Apr 27 12:28:58 2023

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"""

import os
import arcpy


arcpy.env.workspace = os.getcwd()
arcpy.env.overwriteOutput = True


#Just declaring these files as variables for easier access. I could overwrite the
files but this is easier for renaming files in my folder too.
out_coordinate_system = arcpy.SpatialReference(2272)

census_tracts = arcpy.management.Project('cb_2015_42_tract_500k.shp',
'census_tracts.shp', out_coordinate_system)
subway_stations = arcpy.management.Project('SEPTAGISHighspeedStations_201207.shp',
'subway_stations.shp', out_coordinate_system)
rail_stations = arcpy.management.Project('SEPTAGISRegionalRailStations_2016.shp',
'rail_stations.shp', out_coordinate_system)
bus_routes = arcpy.management.Project('SEPTARoutesSpring2016.shp',
'bus_routes.shp', out_coordinate_system)
corner_stores = arcpy.management.Project('PhillyHealth_Healthy_corner_stores.shp',
'corner_stores.shp', out_coordinate_system)
farmers_markets = arcpy.management.Project('PhillyHealth_Farmers_Markets.shp',
'farmers_markets.shp', out_coordinate_system)
empowerment_zones =
arcpy.management.Project('PhiladelphiaEmpowermentZones201201.shp', 'emp_zones.shp',
out_coordinate_system)

#Creating exclusion layer

emp_exc = arcpy.MakeFeatureLayer_management(empowerment_zones, "emp_exc.shp")

#Merging the stores and public transport layers.
stores = arcpy.management.Merge([farmers_markets, corner_stores], "stores.shp")
pt = arcpy.management.Merge([subway_stations, rail_stations], "stations.shp")

#Buffer for stores and public transport layers
store_buf = arcpy.analysis.Buffer(stores, "stores_buffer.shp", "1200 Feet", "FULL",
"ROUND", "ALL")
pt_buf = arcpy.analysis.Buffer(pt, "stations_buffer.shp", "2000 Feet", "FULL",
"ROUND", "ALL")

#Erasing Sore Buffers from exclusion layer
emp_no_store = arcpy.analysis.Erase(emp_exc, store_buf, "emp_no_store.shp")

#Intersect operation on the emp_no_store layer to create the final suitable layer
suitable = arcpy.analysis.Intersect([emp_no_store, pt_buf], "suitable.shp")

#calculating area
suitable_dissolved = arcpy.management.Dissolve("suitable.shp",
"suitable_dissolved.shp")
suitable_single = arcpy.management.MultipartToSinglepart("suitable_dissolved.shp",
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"suitable_single.shp")

arcpy.management.AddGeometryAttributes(suitable_single, "AREA")

arcpy.management.CalculateGeometryAttributes(suitable_single, "AREA")

#FID0 - 1089990.35161
#FID1 - 4049469.94336 **********Largest
#FID2 - 17431.415362
#FID3 - 44499.340354
#FID4 - 3759.77744
```