

Batch Geoprocessing / Iterators etc.

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Geoprocessing

Parameters Environments

Batch Input point or polyline features

- NIBRS_Crime_VC
- NIBRS_Crime_Prop
- Arrest24

Population field
NONE

Output raster
KernelDensity_%Name%

Output cell size
150

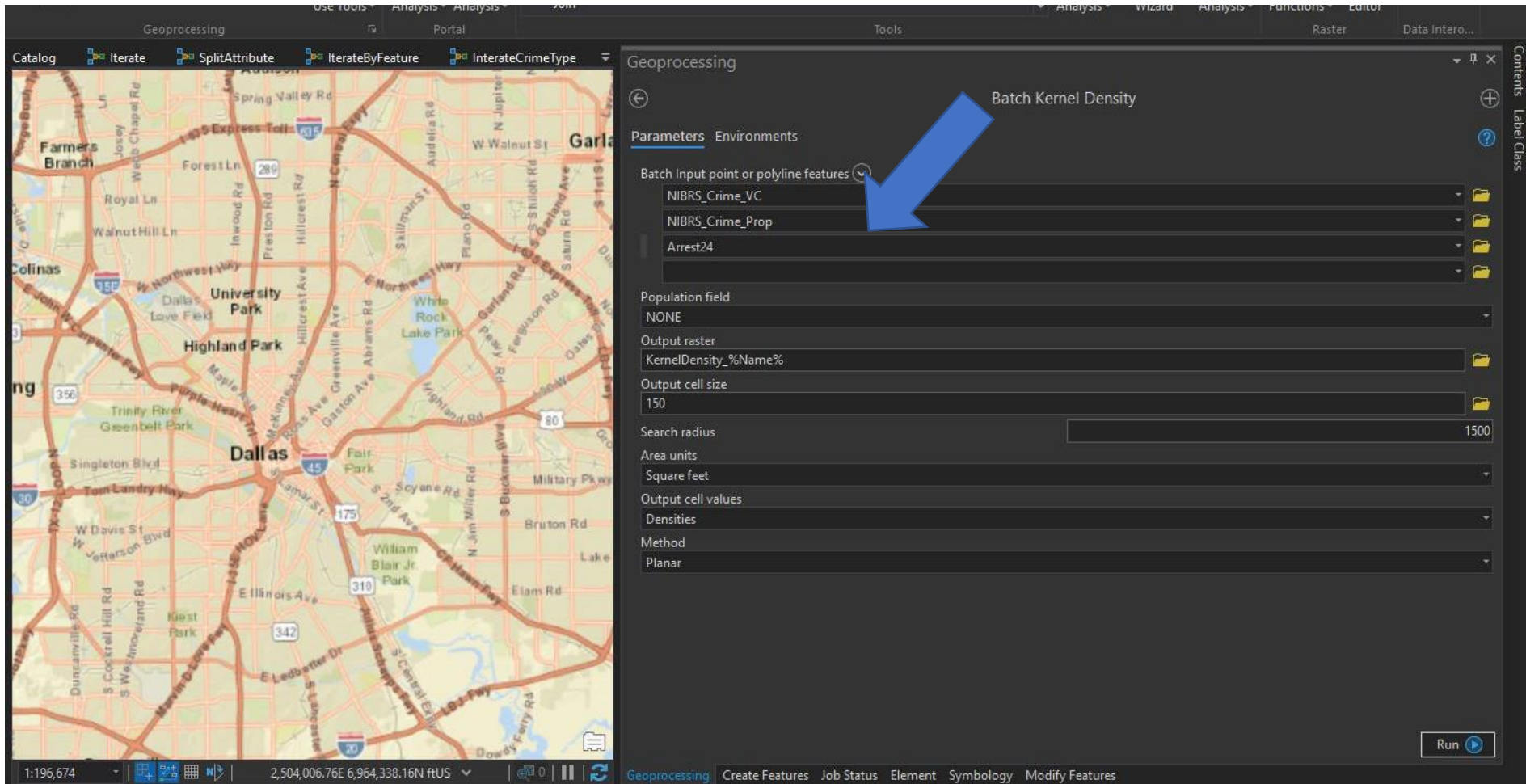
Search radius
1500

Area units
Square feet

Output cell values
Densities

Method
Planar

Run

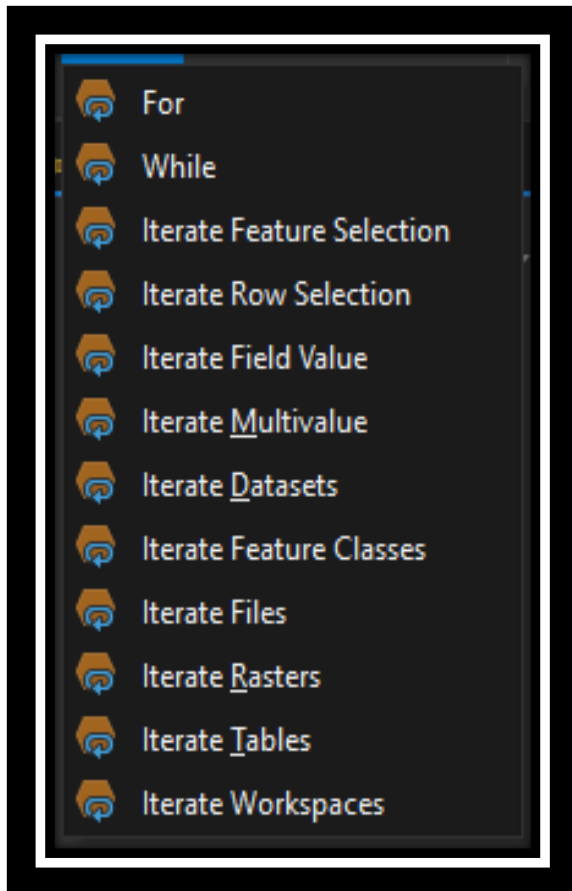


Python.mp / Python.mapping



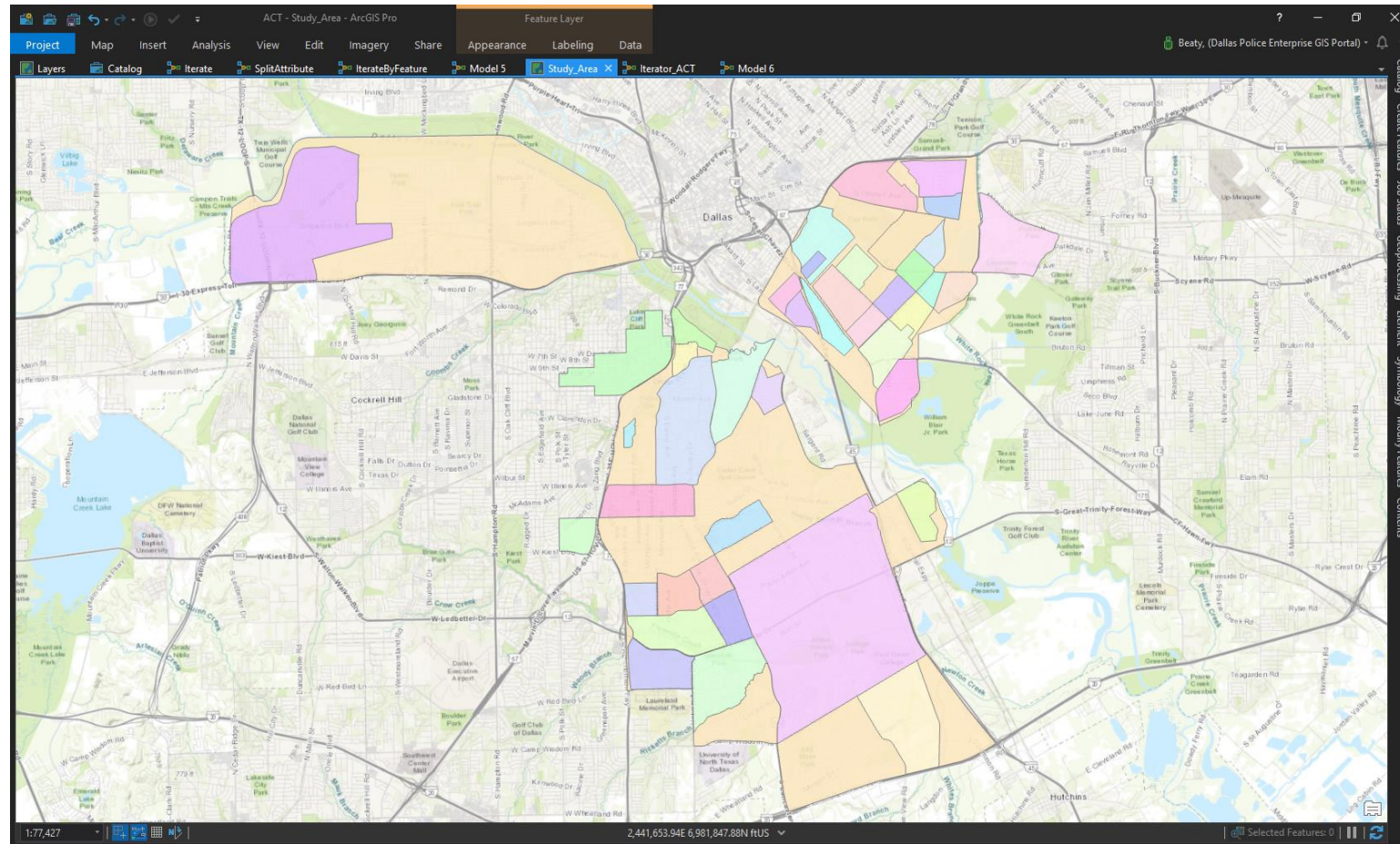
```
ActGeoProcessing_Archi.py - H:\DataSetsPY\ActGeoProcessing_Archi.py (2.7.14)
File Edit Format Run Options Window Help
arcpy.Dissolve_management(VictoryGardens__2_, VictoryGardens_Dissolve, "NIBRS_Crime_CompStat", "NIBRS_Crime_CompStat COUNT", "MULTI_PART", "DISSOLV
# Process: Select
arcpy.Select_analysis(GISDPD_SDE_NIBRS_Crime__2_, NIBRS_CrimeYTD, "Date1 >= '2019-03-01 00:00:00' AND Date1 <= '2019-03-30 00:00:00' And NIBRS_Type
# Process: Clip
arcpy.Clip_analysis(NIBRS_CrimeYTD__2_, v10thStDistrict_shp, Clip10thStDistrict, "")
# Process: Spatial Join
arcpy.SpatialJoin_analysis(Clip10thStDistrict, v10thStDistrict_shp, JN10thSt, "JOIN_ONE_TO_ONE", "KEEP_ALL", "", "INTERSECT", "", "")
# Process: Table To Excel
arcpy.TableToExcel_conversion(JN10thSt, v10thstreetDistrict_xls, "NAME", "CODE")
# Process: Clip (19)
arcpy.Clip_analysis(NIBRS_CrimeYTD__3_, Adelaide_shp, NIBRS_CrimeYTD_Clip, "")
# Process: Spatial Join (2)
arcpy.SpatialJoin_analysis(NIBRS_CrimeYTD_Clip, Adelaide_shp, JNAdelaide, "JOIN_ONE_TO_ONE", "KEEP_ALL",
# Process: Table To Excel (2)
arcpy.TableToExcel_conversion(JNAdelaide, Adelaide_xls, "NAME", "CODE")
# Process: Clip (2)
arcpy.Clip_analysis(NIBRS_CrimeYTD__4_, CrossHampton_shp, CrossHamClip, "")
# Process: Spatial Join (3)
arcpy.SpatialJoin_analysis(CrossHamClip, CrossHampton_shp, CrossHampton, "JOIN_ONE_TO_ONE", "KEEP_ALL",
# Process: Table To Excel (3)
arcpy.TableToExcel_conversion(CrossHampton, CrossHampton_xls, "NAME", "CODE")
# Process: Clip (3)
arcpy.Clip_analysis(NIBRS_CrimeYTD__5_, EdgewoodPl_shp, EdgewoodPL_Clip, "")
# Process: Spatial Join (4)
arcpy.SpatialJoin_analysis(EdgewoodPL_Clip, EdgewoodPl_shp, EdgewoodPL, "JOIN_ONE_TO_ONE", "KEEP_ALL",
# Process: Table To Excel (4)
arcpy.TableToExcel_conversion(EdgewoodPL, EdgewoodPL_xls, "NAME", "CODE")
# Process: Clip (4)
arcpy.Clip_analysis(NIBRS_CrimeYTD__6_, ForestHeights_shp, ForestHeights_Clip, "")
# Process: Spatial Join (5)
arcpy.SpatialJoin_analysis(ForestHeights_Clip, ForestHeights_shp, ForestHeights__2_, "JOIN_ONE_TO_ONE", "KEEP_ALL",
# Process: Table To Excel (5)
arcpy.TableToExcel_conversion(ForestHeights__2_, ForestHeights_xls, "NAME", "CODE")
# Process: Clip (5)
arcpy.Clip_analysis(NIBRS_CrimeYTD__7_, Frazier_shp, Frazier_Clip, "")
# Process: Spatial Join (6)
arcpy.SpatialJoin_analysis(Frazier_Clip, Frazier_shp, Frazier, "JOIN_ONE_TO_ONE", "KEEP_ALL",
Ln: 1 Col: 0
```

POI...

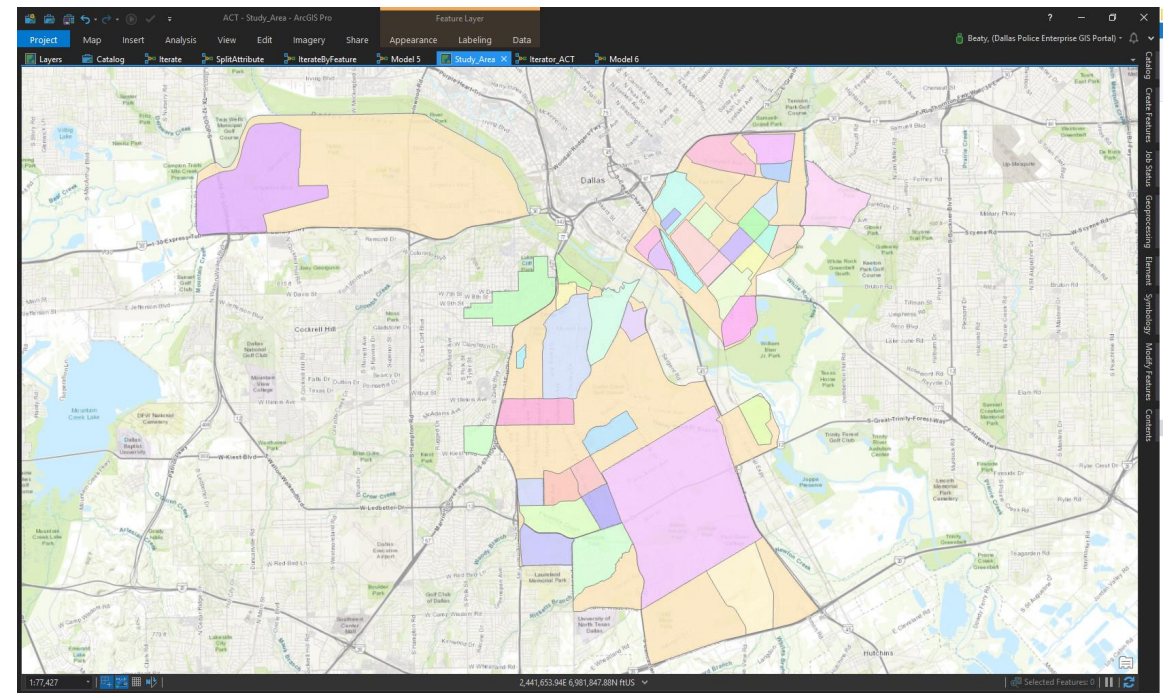
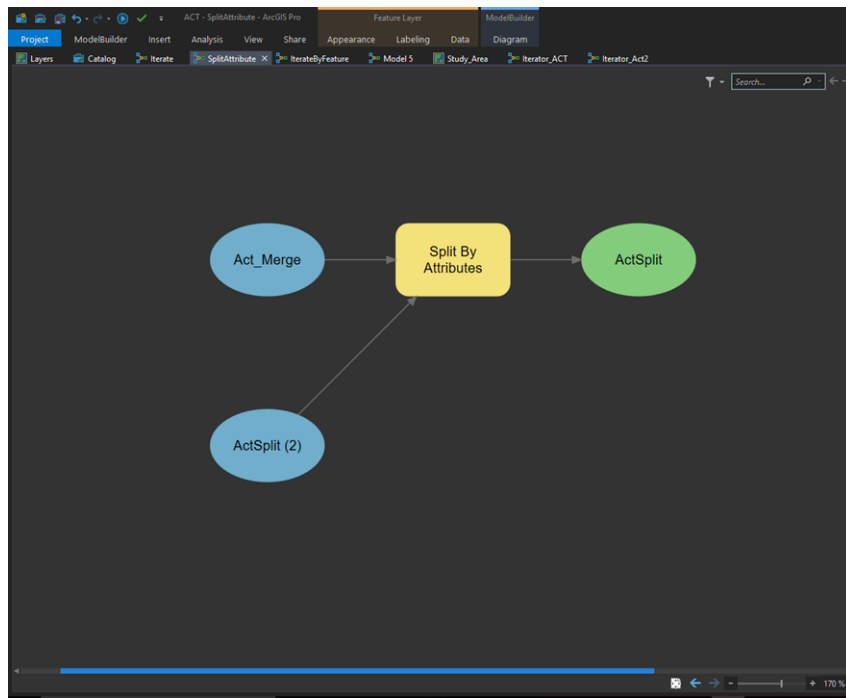


- ✓ Only one Iterator can be used per model
- ✓ Python scripts do not support integration logic
- ✓ The output of a connected tool can have a unique name for each iteration:
 - a) Using the system variable %Name%
`H:\Scratch\Scratch.gdb\%Name%_whatever`
 - b) Using the %Value% output of the Iterator
`H:\Scratch\Scratch.gdb\%Value%_whatever`
 - c) Using any other variable in the model as a inline variable
`H:\Scratch\Scratch.gdb\%XYZ%`

Problem..

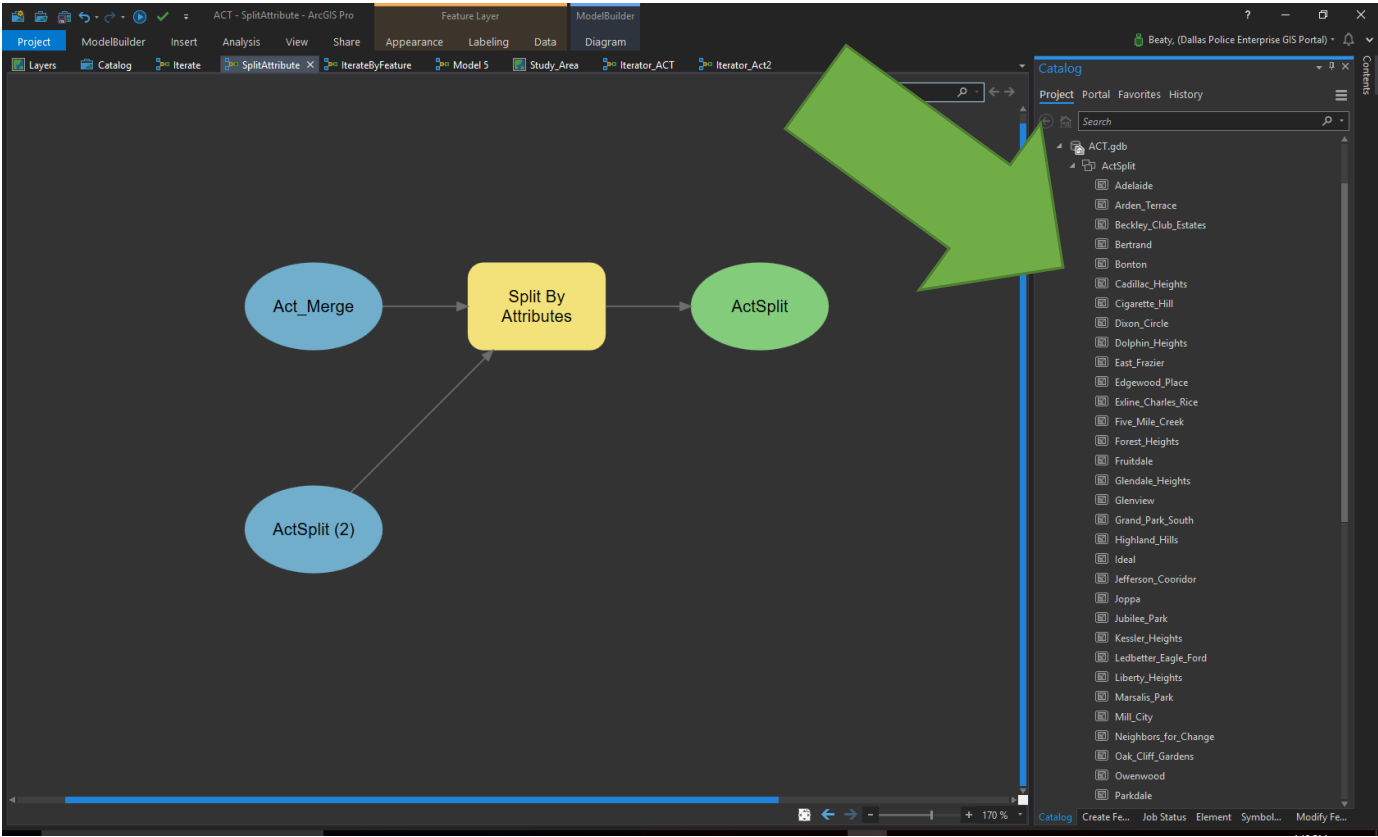


Solutions..

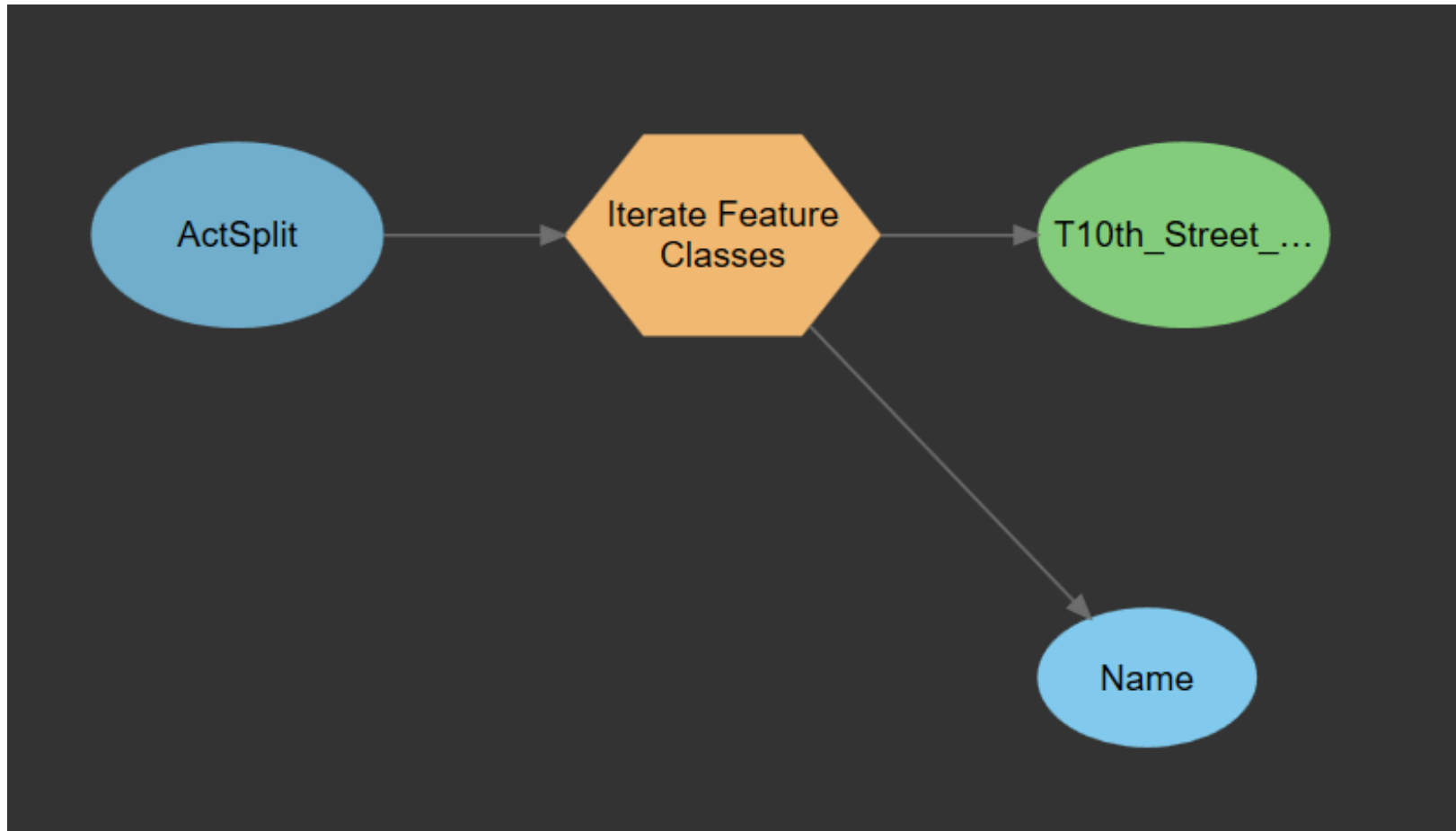




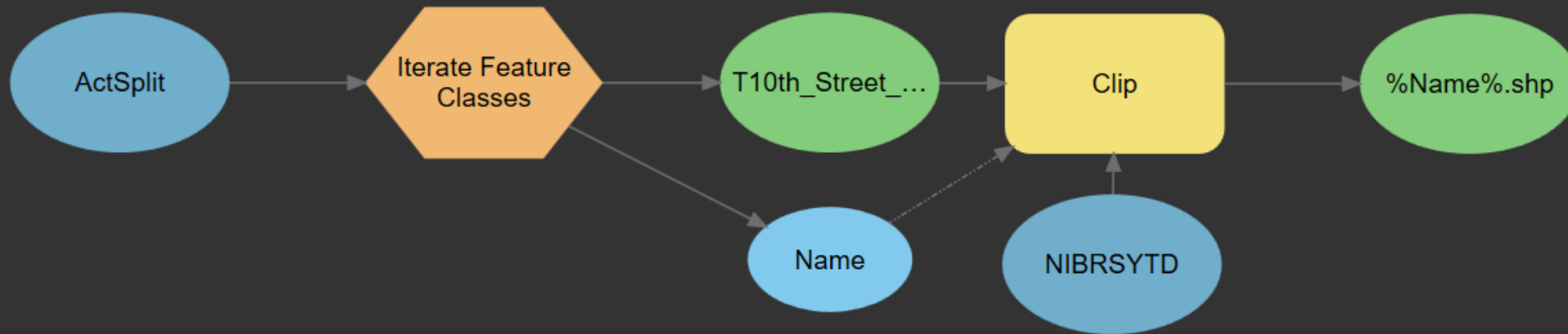
Split By Attributes



Iterate Feature Classes



Adding tools...



Parameters



The screenshot displays a workflow diagram and three parameter dialog boxes in ArcGIS Pro. The workflow starts with 'ActSplit', followed by 'Iterate Feature Classes', which branches into 'T10th_Street_...' and 'Name'. 'T10th_Street_...' and 'NIBRSYTD' are inputs to the 'Clip' tool, which produces the final output '%Name%.shp'.

Iterate Feature Classes Parameters:

- Workspace or Feature Dataset: ActSplit
- Wildcard: (empty)
- Feature Type: Polygon
- Recursive:

Clip Parameters:

- Input Features: NIBRSYTD
- Clip Features: T10th_Street_Historic_District
- Output Feature Class: %Name%.shp
- XY Tolerance: Feet

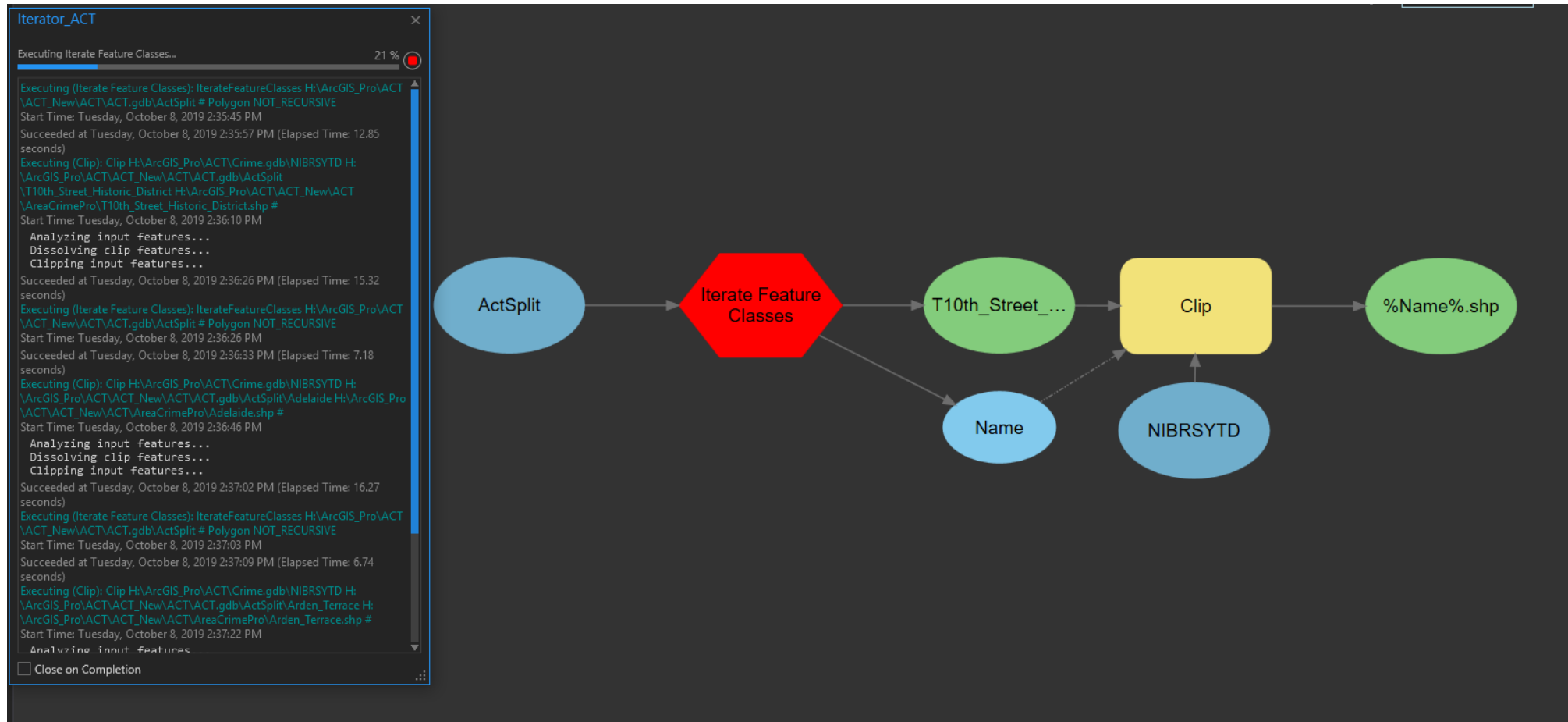
%Name%.shp: Feature Class Properties:

- Value: rcGIS_Pro\ACT\ACT_New\ACT\AreaCrimePro\%Name%.shp

Legend:

- Workspace (blue oval)
- Wildcard (cyan oval)
- Feature Type (cyan oval)
- Recursive (cyan oval)
- Iterate Feature Classes (orange hexagon)
- Output Feature Class (green oval)
- Name (blue oval)

Iterating ...

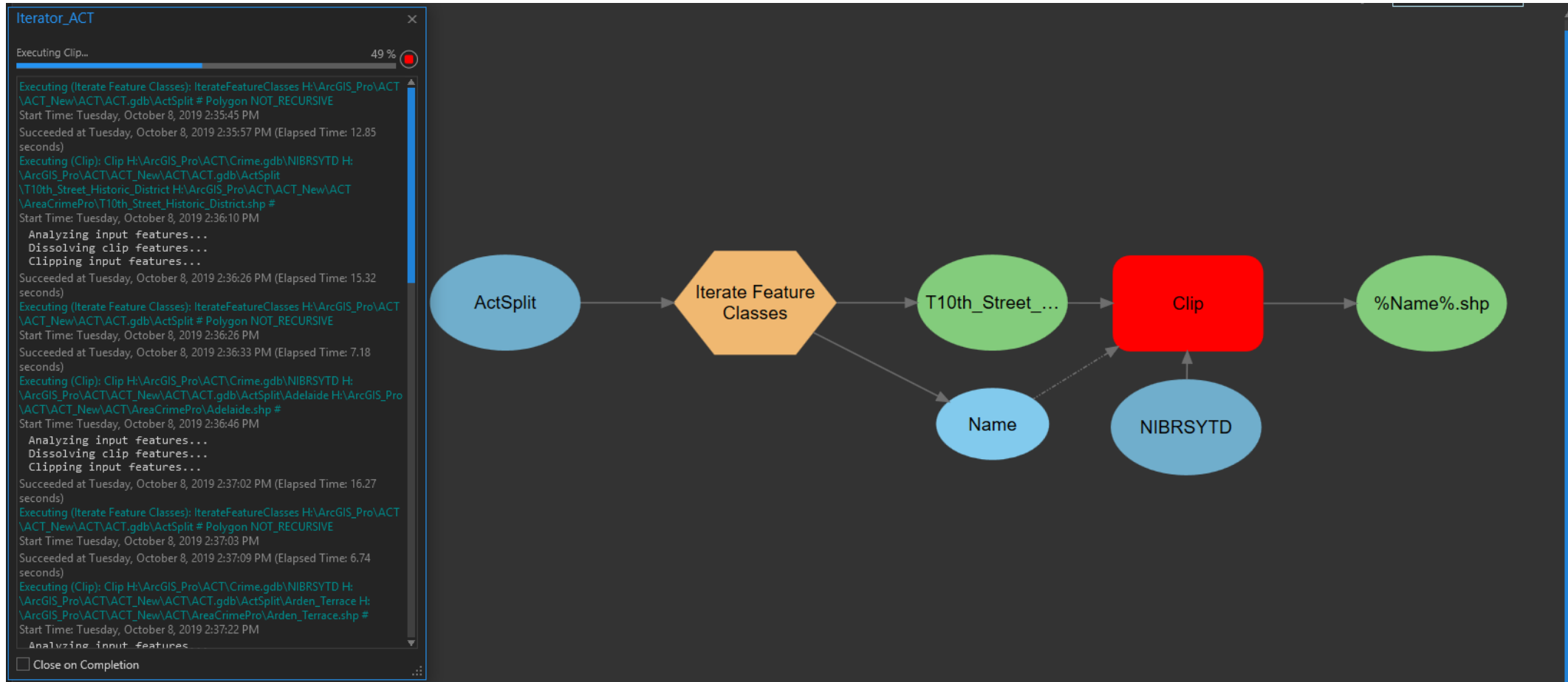


The image displays a screenshot of an ArcGIS iterator tool window on the left and a corresponding flowchart diagram on the right.

Iterator Window (Left): The window is titled "Iterator_ACT" and shows the execution progress of an "Iterate Feature Classes" tool. The progress bar is at 21%. The log shows three iterations of the tool, each followed by a "Clip" tool. The first iteration processes "T10th_Street_Historic_District", the second "Adelaide", and the third "Arden_Terrace". Each iteration includes the following steps: "Analyzing input features...", "Dissolving clip features...", and "Clipping input features...". The window also has a "Close on Completion" checkbox at the bottom.

Flowchart (Right): The flowchart illustrates the workflow of the iterator tool. It starts with an oval labeled "ActSplit", which points to a red hexagon labeled "Iterate Feature Classes". From "Iterate Feature Classes", two arrows branch out: one to a green oval labeled "T10th_Street_..." and another to a blue oval labeled "Name". The "T10th_Street_..." oval points to a yellow rounded rectangle labeled "Clip". The "Name" oval points to a blue oval labeled "NIBRSYTD", which in turn points to the "Clip" tool. Finally, the "Clip" tool points to a green oval labeled "%Name%.shp".

Clipping..



The image displays a screenshot of the ArcGIS Pro console window on the left and a workflow diagram on the right. The console window, titled 'Iterator_ACT', shows the execution of a 'Clip' tool. The progress bar indicates 49% completion. The console text includes the following details:

- Executing (Iterate Feature Classes): IterateFeatureClasses H:\ArcGIS_Pro\ACT\ACT_New\ACT\ACT.gdb\ActSplit # Polygon NOT_RECURSIVE
- Start Time: Tuesday, October 8, 2019 2:35:45 PM
- Succeeded at Tuesday, October 8, 2019 2:35:57 PM (Elapsed Time: 12.85 seconds)
- Executing (Clip): Clip H:\ArcGIS_Pro\ACT\Crime.gdb\NIBRSYTD H:\ArcGIS_Pro\ACT\ACT_New\ACT\ACT.gdb\ActSplit
- Start Time: Tuesday, October 8, 2019 2:36:10 PM
- Analyzing input features...
- Dissolving clip features...
- Clipping input features...
- Succeeded at Tuesday, October 8, 2019 2:36:26 PM (Elapsed Time: 15.32 seconds)
- Executing (Iterate Feature Classes): IterateFeatureClasses H:\ArcGIS_Pro\ACT\ACT_New\ACT\ACT.gdb\ActSplit # Polygon NOT_RECURSIVE
- Start Time: Tuesday, October 8, 2019 2:36:26 PM
- Succeeded at Tuesday, October 8, 2019 2:36:33 PM (Elapsed Time: 7.18 seconds)
- Executing (Clip): Clip H:\ArcGIS_Pro\ACT\Crime.gdb\NIBRSYTD H:\ArcGIS_Pro\ACT\ACT_New\ACT\ACT.gdb\ActSplit\Adelaide H:\ArcGIS_Pro\ACT\ACT_New\ACT\AreaCrimePro\Adelaide.shp #
- Start Time: Tuesday, October 8, 2019 2:36:46 PM
- Analyzing input features...
- Dissolving clip features...
- Clipping input features...
- Succeeded at Tuesday, October 8, 2019 2:37:02 PM (Elapsed Time: 16.27 seconds)
- Executing (Iterate Feature Classes): IterateFeatureClasses H:\ArcGIS_Pro\ACT\ACT_New\ACT\ACT.gdb\ActSplit # Polygon NOT_RECURSIVE
- Start Time: Tuesday, October 8, 2019 2:37:03 PM
- Succeeded at Tuesday, October 8, 2019 2:37:09 PM (Elapsed Time: 6.74 seconds)
- Executing (Clip): Clip H:\ArcGIS_Pro\ACT\Crime.gdb\NIBRSYTD H:\ArcGIS_Pro\ACT\ACT_New\ACT\ACT.gdb\ActSplit\Arden_Terrace H:\ArcGIS_Pro\ACT\ACT_New\ACT\AreaCrimePro\Arden_Terrace.shp #
- Start Time: Tuesday, October 8, 2019 2:37:22 PM
- Analyzing input features...

The workflow diagram on the right illustrates the process flow:

- ActSplit** (blue oval) feeds into **Iterate Feature Classes** (orange hexagon).
- Iterate Feature Classes** outputs to **T10th_Street_...** (green oval) and **Name** (blue oval).
- T10th_Street_...** and **Name** feed into **Clip** (red rounded rectangle).
- NIBRSYTD** (blue oval) also feeds into **Clip**.
- Clip** outputs to **%Name%.shp** (green oval).

WARNINGS empty outputs



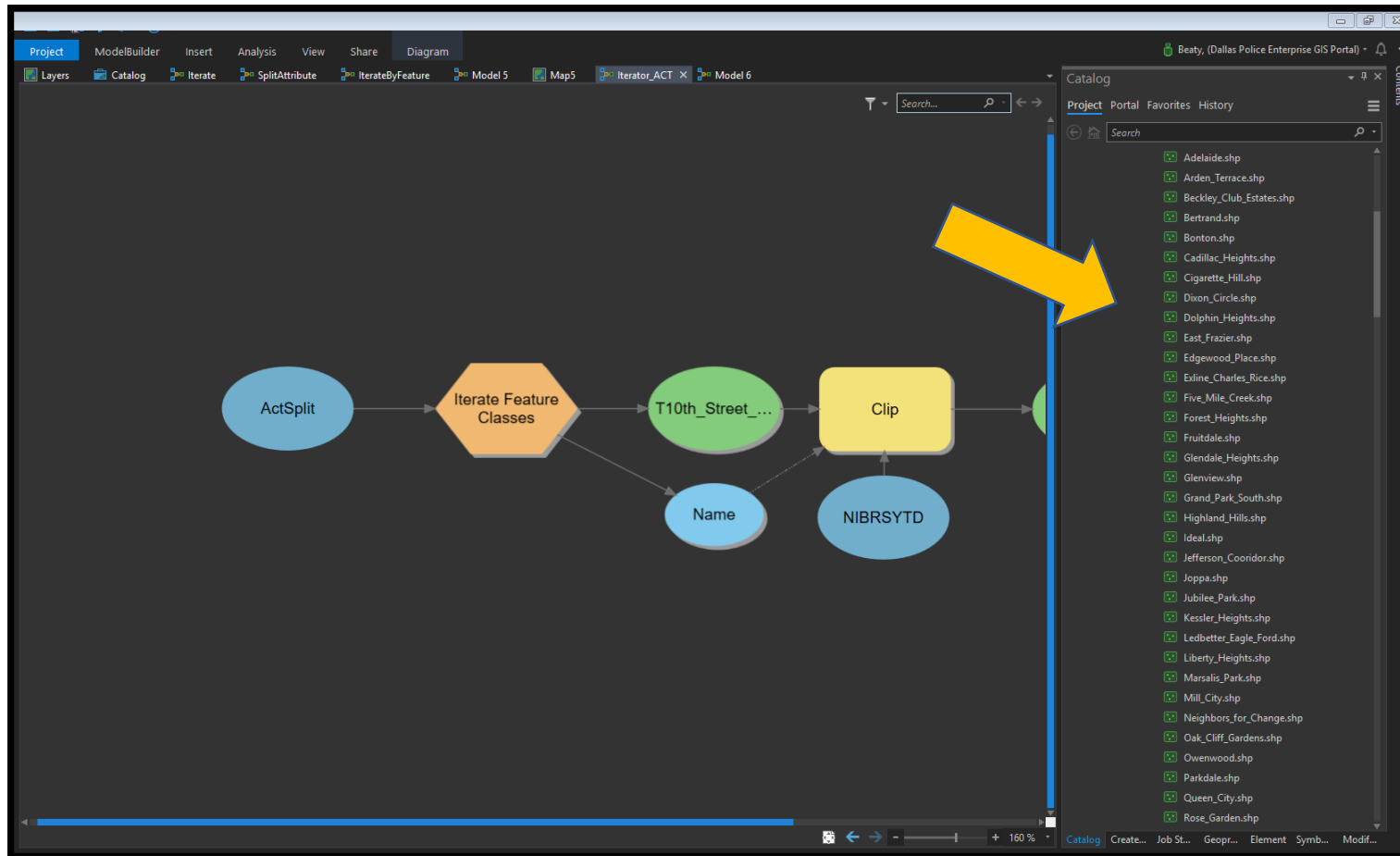
The screenshot displays the ArcGIS Pro Model Builder interface. On the left, the console window for the 'Iterator_ACT' model shows the following execution log:

```
Done
\\ArcGIS_Pro\ACT\ACT_New\ACT\AreaCrimePro\West_Dallas.shp #
Start Time: Tuesday, October 8, 2019 3:03:30 PM
Analyzing input features...
Dissolving clip features...
Clipping input features...
Succeeded at Tuesday, October 8, 2019 3:03:54 PM (Elapsed Time: 23.53 seconds)
Executing (Iterate Feature Classes): IterateFeatureClasses H:\ArcGIS_Pro\ACT\ACT_New\ACT\ACT_gdb\ActSplit # Polygon NOT_RECURSIVE
Start Time: Tuesday, October 8, 2019 3:03:54 PM
Succeeded at Tuesday, October 8, 2019 3:04:01 PM (Elapsed Time: 7.21 seconds)
Executing (Clip): Clip H:\ArcGIS_Pro\ACT\Crime.gdb\NIBRSYTD H:\ArcGIS_Pro\ACT\ACT_New\ACT\ACT_gdb\ActSplit\South_Oak_Cliff H:\ArcGIS_Pro\ACT\ACT_New\ACT\AreaCrimePro\South_Oak_Cliff.shp #
Start Time: Tuesday, October 8, 2019 3:04:14 PM
Analyzing input features...
WARNING_000117: Warning empty output generated.
Succeeded at Tuesday, October 8, 2019 3:04:25 PM (Elapsed Time: 10.95 seconds)
Executing (Iterate Feature Classes): IterateFeatureClasses H:\ArcGIS_Pro\ACT\ACT_New\ACT\ACT_gdb\ActSplit # Polygon NOT_RECURSIVE
Start Time: Tuesday, October 8, 2019 3:04:25 PM
Succeeded at Tuesday, October 8, 2019 3:04:32 PM (Elapsed Time: 6.73 seconds)
Executing (Clip): Clip H:\ArcGIS_Pro\ACT\Crime.gdb\NIBRSYTD H:\ArcGIS_Pro\ACT\ACT_New\ACT\ACT_gdb\ActSplit\South_Dallas H:\ArcGIS_Pro\ACT\ACT_New\ACT\AreaCrimePro\South_Dallas.shp #
Start Time: Tuesday, October 8, 2019 3:04:45 PM
Analyzing input features...
WARNING_000117: Warning empty output generated.
Succeeded at Tuesday, October 8, 2019 3:04:56 PM (Elapsed Time: 11.66 seconds)
Executing (Iterate Feature Classes): IterateFeatureClasses H:\ArcGIS_Pro\ACT\ACT_New\ACT\ACT_gdb\ActSplit # Polygon NOT_RECURSIVE
Start Time: Tuesday, October 8, 2019 3:04:57 PM
Succeeded at Tuesday, October 8, 2019 3:04:57 PM (Elapsed Time: 0.56 seconds)
Close on Completion
```

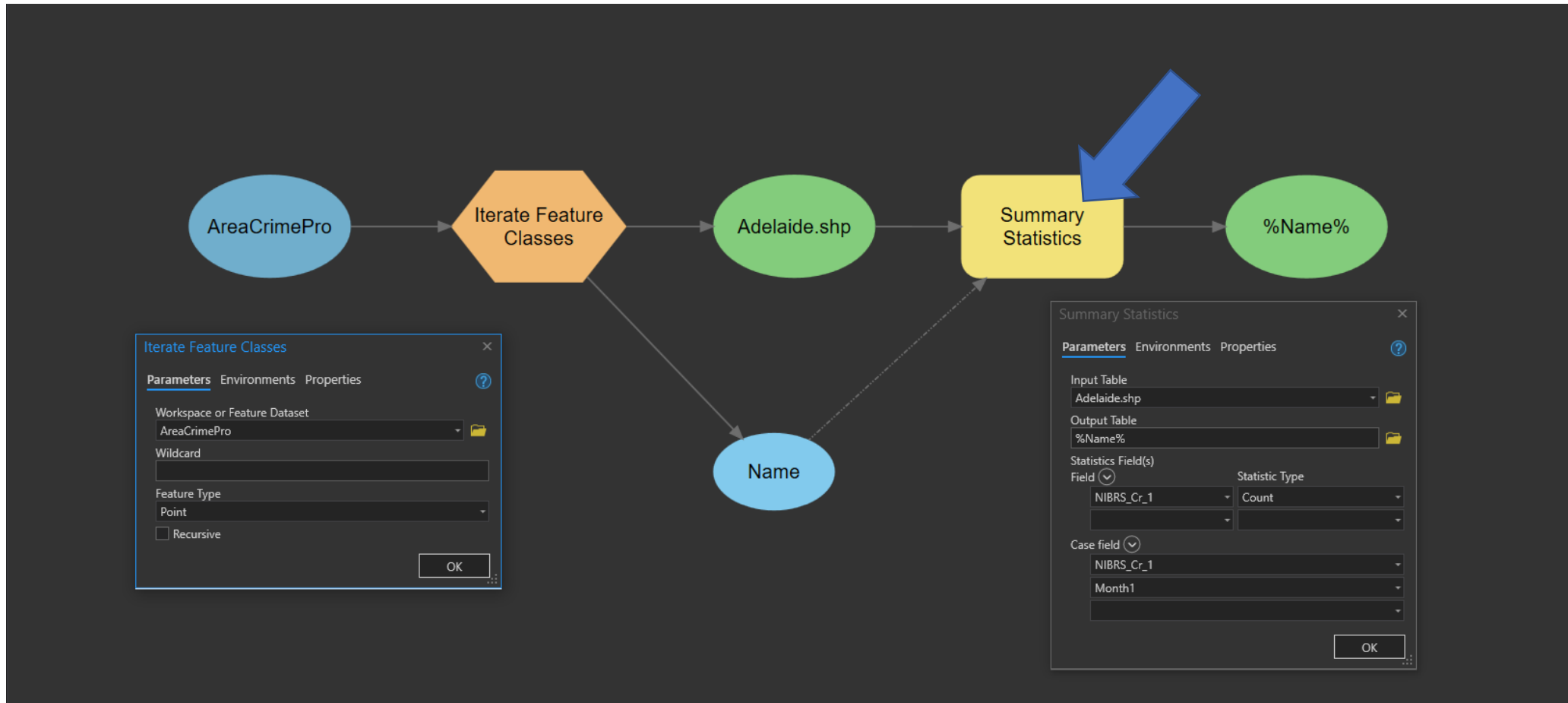
The workflow diagram on the right shows the following steps:

- ActSplit** (blue oval) feeds into **Iterate Feature Classes** (orange hexagon).
- Iterate Feature Classes** outputs to **T10th_Street_...** (green oval) and **Name** (blue oval).
- Name** feeds into **NIBRSYTD** (blue oval).
- NIBRSYTD** feeds into **Clip** (yellow rounded rectangle).
- Clip** outputs to **%Name%.shp** (green oval).

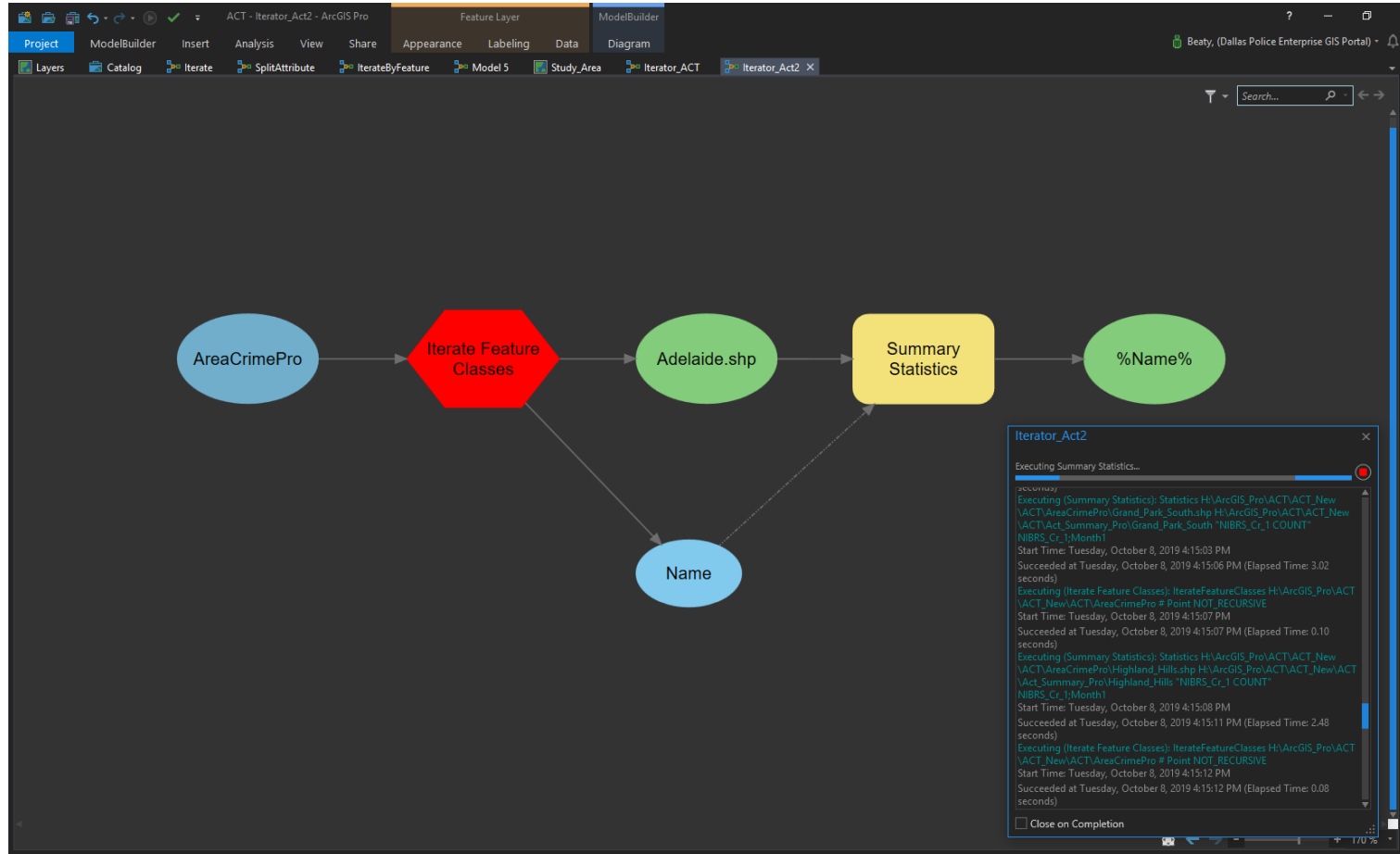
Clipped Crime Features



2nd Iteration / Summary Statistics



Summary Statistics Cont....

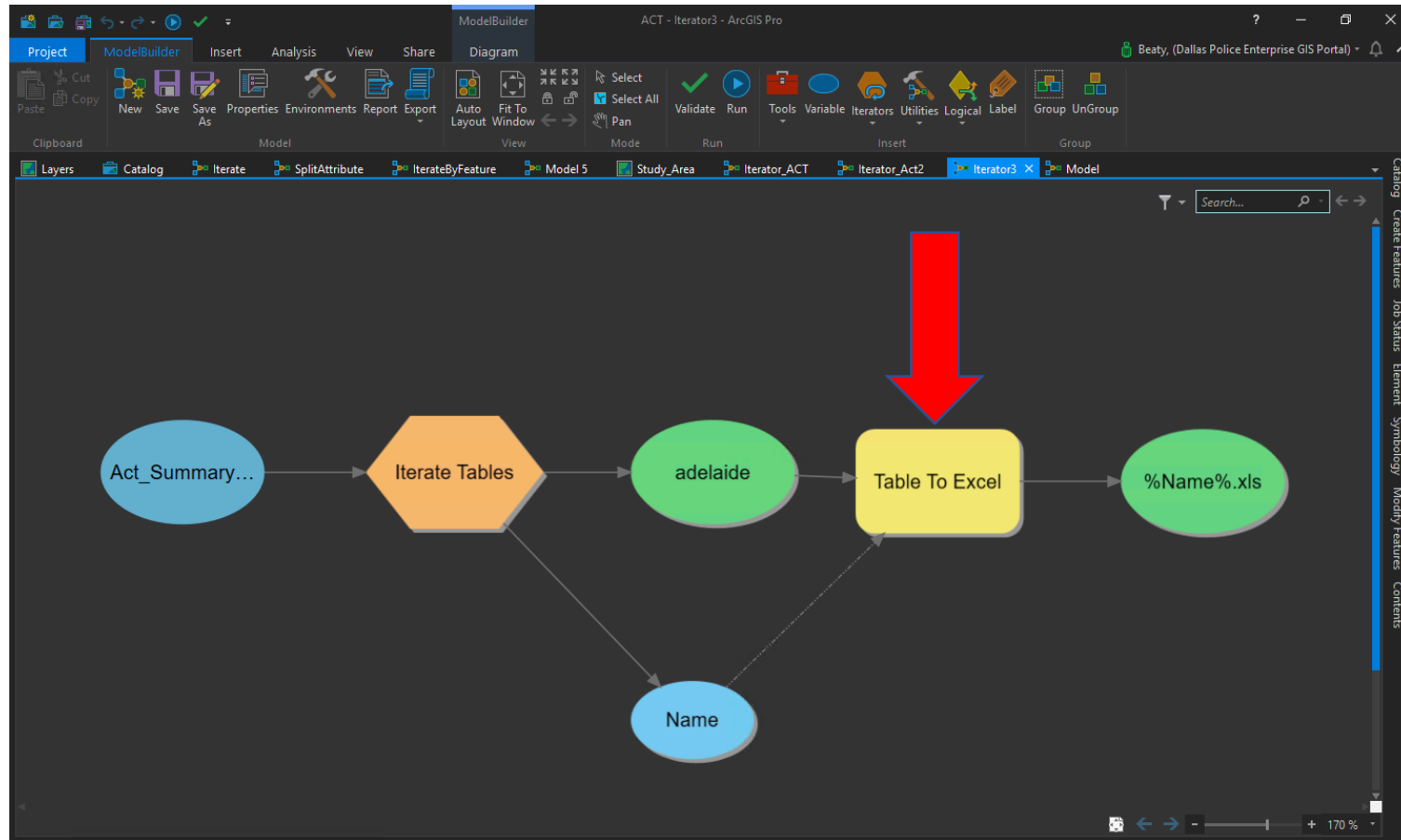


Dbase Table



- Act_Summary
 - adelaide_2
 - arden_terrace_2
 - beckley_club_estates_2
 - bertrand_2
 - bonton_2
 - cadillac_heights_2
 - cigarette_hill_2
 - dixon_circle_2
 - dolphin_heights_2
 - east_frazier_2
 - edgewood_place_2
 - exline_charles_rice_2
 - five_mile_creek_2
 - forest_heights_2
 - fruitdale_2
 - glendale_heights_2
 - glenview_2
 - grand_park_south_2
 - highland_hills_2
 - ideal_2
 - jefferson_cooridor_2
 - joppa_2
 - jubilee_park_2
 - kessler_heights_2
 - ledbetter_eagle_ford_2
 - liberty_heights_2
 - marsalis_park_2
 - mill_city_2
 - neighbors_for_change_2
 - oak_cliff_gardens_2
 - owenwood_2
 - parkdale_2
 - queen_city_2
 - rose_garden_2
 - rufco_2

Iterate Tables



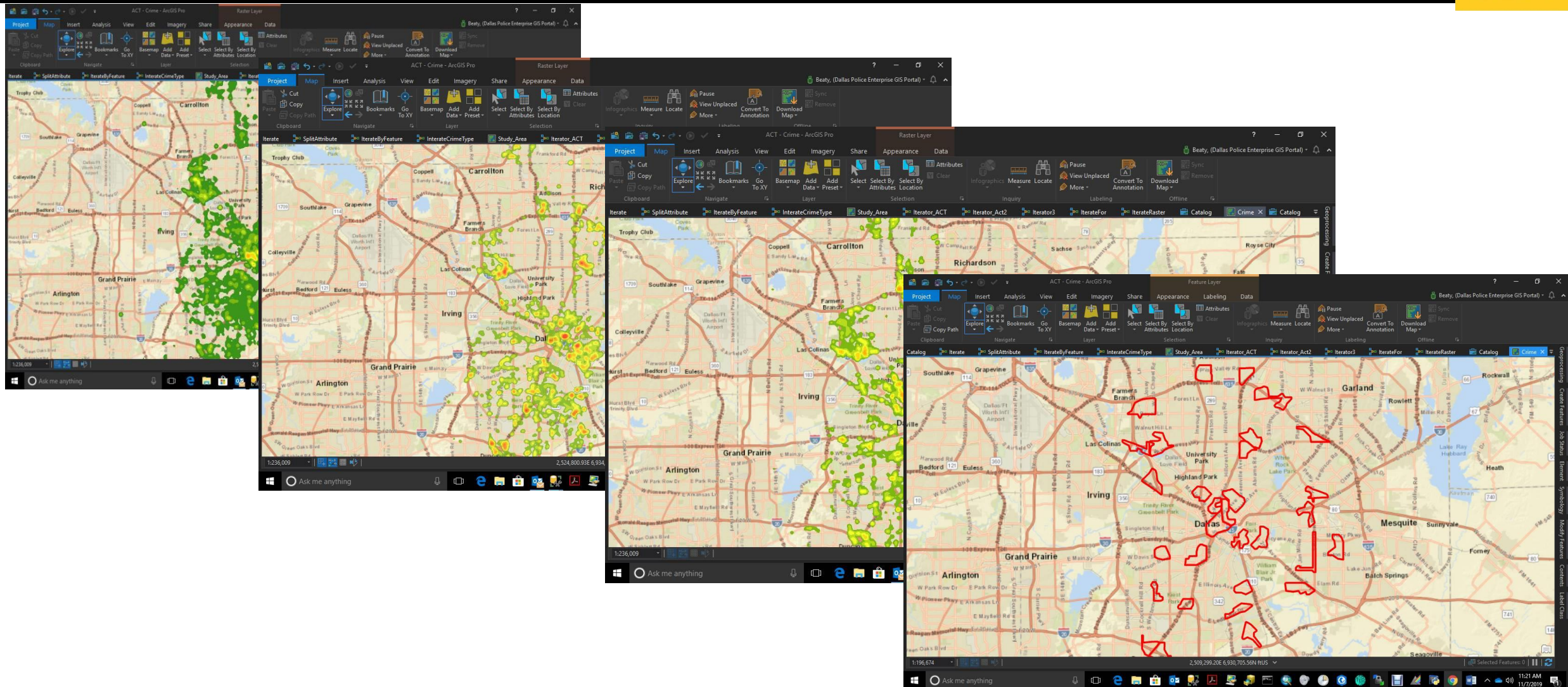


Solutions..

Name	Date modified	Type	Size
adelaide.xls	10/8/2019 4:55 PM	Microsoft Excel 97...	10 KB
arden_terrace.xls	10/8/2019 4:56 PM	Microsoft Excel 97...	10 KB
beckley_club_estates.xls	10/8/2019 4:56 PM	Microsoft Excel 97...	6 KB
bertrand.xls	10/8/2019 4:57 PM	Microsoft Excel 97...	10 KB
bonton.xls	10/8/2019 4:57 PM	Microsoft Excel 97...	10 KB
cadillac_heights.xls	10/8/2019 4:58 PM	Microsoft Excel 97...	6 KB
cigarette_hill.xls	10/8/2019 4:58 PM	Microsoft Excel 97...	10 KB
dixon_circle.xls	10/8/2019 4:59 PM	Microsoft Excel 97...	10 KB
dolphin_heights.xls	10/8/2019 4:59 PM	Microsoft Excel 97...	6 KB
east_frazier.xls	10/8/2019 5:00 PM	Microsoft Excel 97...	10 KB
edgewood_place.xls	10/8/2019 5:00 PM	Microsoft Excel 97...	10 KB
exline_charles_rice.xls	10/8/2019 5:01 PM	Microsoft Excel 97...	10 KB
five_mile_creek.xls	10/8/2019 5:01 PM	Microsoft Excel 97...	10 KB
forest_heights.xls	10/8/2019 5:02 PM	Microsoft Excel 97...	10 KB
fruitdale.xls	10/8/2019 5:02 PM	Microsoft Excel 97...	14 KB
glendale_heights.xls	10/8/2019 5:03 PM	Microsoft Excel 97...	10 KB
glenview.xls	10/8/2019 5:03 PM	Microsoft Excel 97...	10 KB
grand_park_south.xls	10/8/2019 5:04 PM	Microsoft Excel 97...	14 KB
highland_hills.xls	10/8/2019 5:04 PM	Microsoft Excel 97...	14 KB
ideal.xls	10/8/2019 5:05 PM	Microsoft Excel 97...	10 KB
jefferson_cooridor.xls	10/8/2019 5:06 PM	Microsoft Excel 97...	14 KB
joppa.xls	10/8/2019 5:06 PM	Microsoft Excel 97...	6 KB
jubilee_park.xls	10/8/2019 5:07 PM	Microsoft Excel 97...	10 KB
kessler_heights.xls	10/8/2019 5:07 PM	Microsoft Excel 97...	14 KB
ledbetter_eagle_ford.xls	10/8/2019 5:08 PM	Microsoft Excel 97...	10 KB
liberty_heights.xls	10/8/2019 5:08 PM	Microsoft Excel 97...	10 KB
marsalis_park.xls	10/8/2019 5:09 PM	Microsoft Excel 97...	6 KB

1	Rowid	NIBRS_CRIME	MONTH	FREQUENCY
2	1	AGG ASSAULT - FV	April	1
3	8	BMV	April	5
4	21	BURGLARY-RESIDENCE	April	2
5	34	ROBBERY-INDIVIDUAL	April	1
6	39	UUMV	April	2
7	3	AGG ASSAULT - NFV	August	1
8	9	BMV	August	2
9	22	BURGLARY-RESIDENCE	August	1
10	28	OTHER THEFT	August	2
11	40	UUMV	August	3
12	10	BMV	February	1
13	23	BURGLARY-RESIDENCE	February	2
14	35	ROBBERY-INDIVIDUAL	February	1
15	41	UUMV	February	4
16	2	AGG ASSAULT - FV	January	2
17	11	BMV	January	1
18	16	BURGLARY-BUSINESS	January	1
19	24	BURGLARY-RESIDENCE	January	1
20	29	OTHER THEFT	January	2
21	38	SHOPLIFTING	January	1
22	42	UUMV	January	1
23	4	AGG ASSAULT - NFV	July	1
24	12	BMV	July	6
25	17	BURGLARY-BUSINESS	July	1
26	30	OTHER THEFT	July	1
27	36	ROBBERY-INDIVIDUAL	July	1
28	43	UUMV	July	3
29	5	AGG ASSAULT - NFV	June	1
30	13	BMV	June	3
31	18	BURGLARY-BUSINESS	June	3
32	25	BURGLARY-RESIDENCE	June	1
33	31	OTHER THEFT	June	4
34	44	UUMV	June	3

Iterate Raster's



Iterate Raster's



The screenshot displays the ArcGIS Pro ModelBuilder interface. The main workspace shows a workflow diagram with the following steps:

- TestDemo** (Start)
- Iterate Rasters** (Iterator)
- Arrest24.tif** (Intermediate Raster)
- Clip Raster** (Tool)
- %Name%** (Output Raster)
- TAAG (2)** (Clipping Geometry)
- Name** (Variable)

The **Clip Raster** tool properties are open, showing the following configuration:

- Input Raster:** Arrest24.tif
- Output Extent:** TAAG
- Rectangle:** X: 2456334.04997177 to 2537839.70323311; Y: 6921146.75875951 to 7030386.84605318
- Use Input Features for Clipping Geometry
- Output Raster Dataset:** H:\ArcGIS_Pro\TestDemoOutputs\%Name%.tif
- NoData Value:** -3.402823e+38
- Maintain Clipping Extent

The bottom of the screen shows the Windows taskbar with the system clock at 4:23 PM on 11/7/2019.

Iterate Raster's

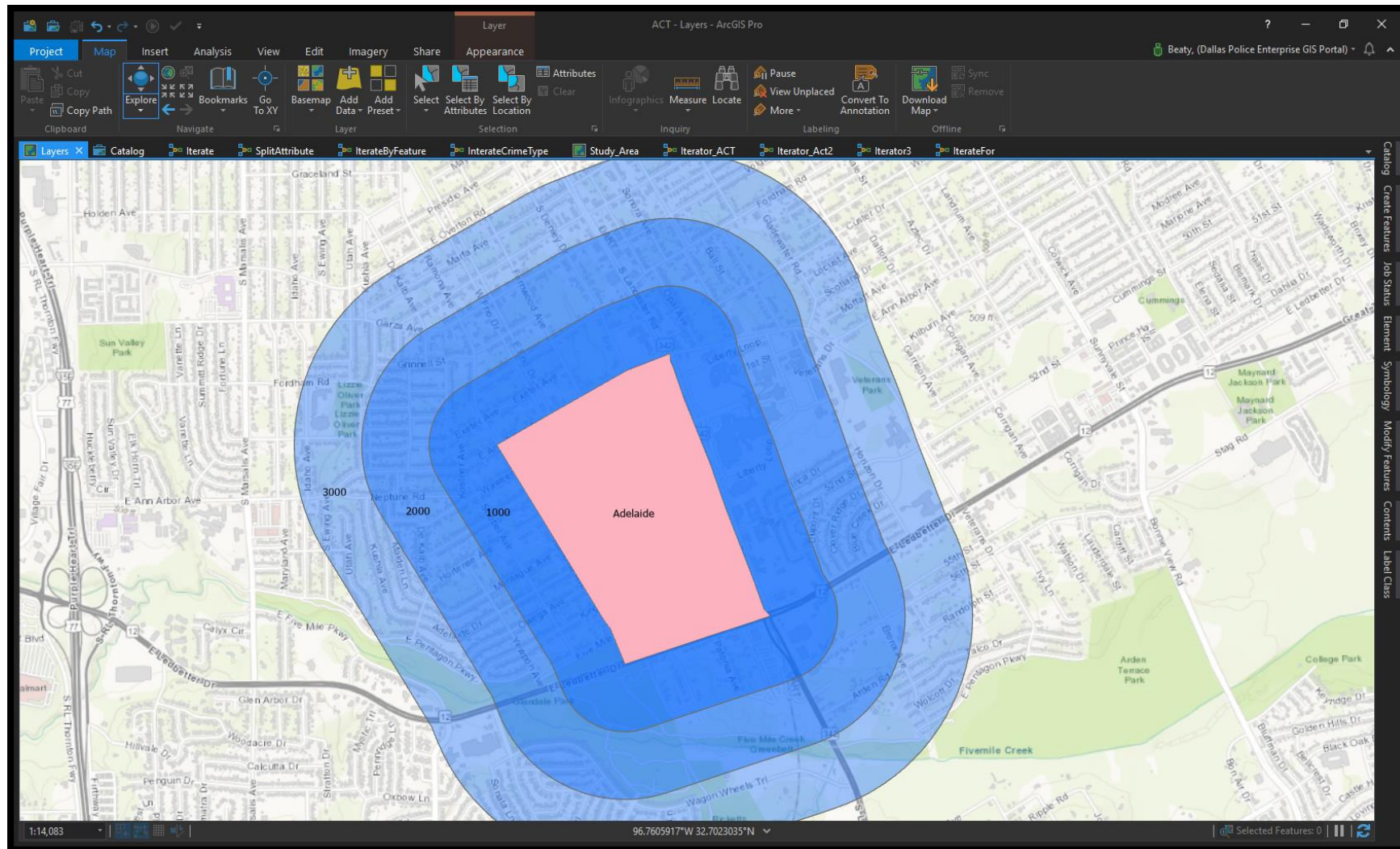


The screenshot displays the ArcGIS Pro interface for a project titled "ACT - Crime". The main map area shows a geographic region with several irregularly shaped areas outlined in red, representing crime incidents. The interface includes a ribbon menu at the top with tabs for Project, Map, Insert, Analysis, View, Edit, Imagery, and Share. Below the ribbon is a toolbar with various tools like Create, Add, Import, and Remove. The Contents panel on the right side of the map shows a list of layers under the heading "Crime". The layers listed are:

- Arrest24
- NIBRS_Crime_VC
- NIBRS_Crime_Prop
- TAAG
- %NIBRS_Crime_VC%.tif (Value: 2.80511e-05)
- %NIBRS_Crime_Prop%.tif (Value: 0.000417884)
- %Arrest24%.tif (Value: 7.40091e-05)
- World Street Map

The bottom status bar shows the scale as 1:185,108 and the coordinates as 2,553,267.57E 6,941,866.94N ftUS. The system tray at the bottom right indicates the time is 4:35 PM on 11/7/2019.

For Iterator – Multiple Buffers



For Iterator – Multiple Buffers

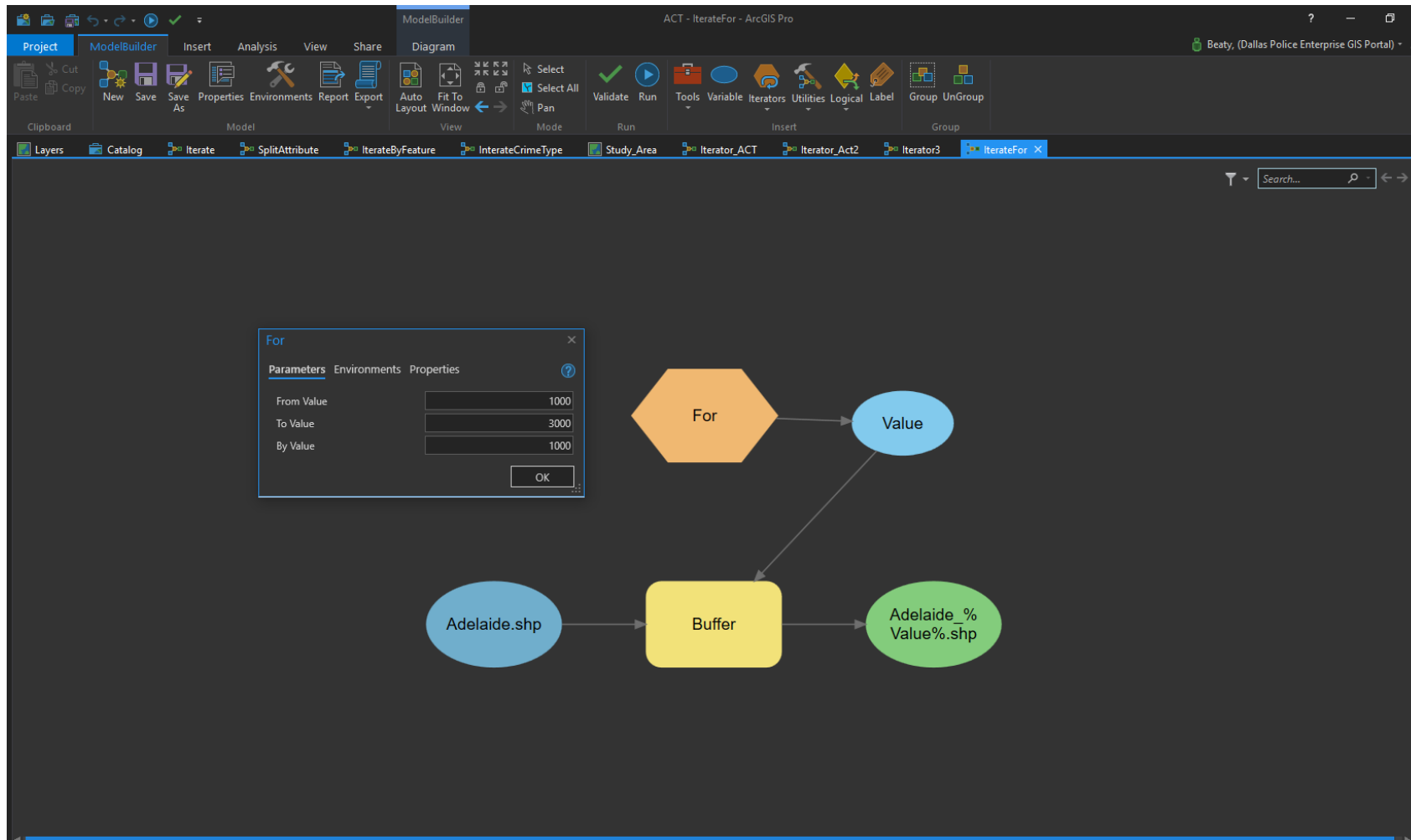


The screenshot displays the ArcGIS Pro interface. The main map area shows a residential neighborhood with several concentric blue buffers centered on a specific location. The buffers are labeled with distances: 1000, 2000, and 3000. The map is populated with various colored symbols representing different crime incidents. The legend on the right side of the interface lists the following categories:

- NIBRSYTD**
 - VIOLENT | AGG ASSAULT - FV (Red square)
 - VIOLENT | AGG ASSAULT - NFV (Black square)
 - VIOLENT | MURDER & NONNEGLIGENT MANSLAUGHTER (Red triangle)
 - VIOLENT | NEGLIGENT MANSLAUGHTER (Blue triangle)
 - VIOLENT | ROBBERY-BUSINESS (Green triangle)
 - VIOLENT | ROBBERY-INDIVIDUAL (Purple triangle)
 - VIOLENT | FONDLING (Red circle)
 - VIOLENT | RAPE (Red circle)
 - VIOLENT | SEXUAL ASSAULT WITH AN OBJECT (Green circle)
 - VIOLENT | SODOMY (Pink circle)
 - NON-VIOLENT | BURGLARY-BUSINESS (Yellow circle)
 - NON-VIOLENT | BURGLARY-RESIDENCE (Light green circle)
 - NON-VIOLENT | BMV (Blue circle)
 - NON-VIOLENT | OTHER THEFT (Cyan circle)
 - NON-VIOLENT | SHOPLIFTING (Orange square)
 - NON-VIOLENT | UUMV (Light green circle)
- Adelaide (Pink square)
- Adelaide_1000 (Blue square)
- Adelaide_2000 (Blue square)
- Adelaide_3000 (Blue square)
- Act_Merge (Light blue square)
- World Topographic Map (Light green square)

The interface also shows the 'Contents' pane on the right, the 'Layers' pane, and the 'Drawing Order' pane. The status bar at the bottom indicates the coordinates 96.7710533°W 32.6896453°N and the scale 1:14,083.

For Iterator – Multiple Buffers



Schedule a model / Create a task



```
*ScheduleModelTask.py - H:\DataSetsPY\ScheduleModelTask.py (2.7.14)*
File Edit Format Run Options Window Help
# -*- coding: utf-8 -*-
# -----
# Created on: 2019-09-16 15:36:17.00000
# Created By DJ Beaty
# Source: https://pro.arcgis.com/en/pro-app/help/analysis/geoprocessing/modelbuilder/scheduling-a-model-run.htm
# Description: schedule a model to run at a particular time and with a specified frequency using Windows Task Scheduler
# -----
#You can use ArcPy to run both built-in geoprocessing tools (such as Buffer), and any custom model or script tools in Python.

import arcpy
arcpy.ImportToolbox(r"C:\path\myToolbox.tbx", "tbxAlias")
arcpy.myModel_tbxAlias(r"c:\pathToInput\inputFolder", r"C:\pathToGdb\output.gdb")

Ln: 13 Col: 81
```

Questions



?

Sr. Cpl. DJ BEATY

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214 671 4056