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APPENDIX 1: AVENUE CODE FOR EXTRACTING SPATIAL DATA

'Name: BufferSel_Int

'Title: Create new intersection theme + 10 metre buffer by CCD for PLACE project

'Topics: Analysis

' Description: Buffer each polygon unit (CCD) by specified distance (10 ' 'metres) and select point theme within the buffer and selected CCD. 'Write new theme for each CCD.

'Requires: Two themes in the view

' Self:

'Returns: A new table of selected points (intersections) with target feature IDs (CD_Code).

' History: 23/7/2001 - Created by Neil Coffee <ncoffee@gisca.adelaide.edu.au>

```
' Initial set up and error checks:
```

theView = av.GetActiveDoc

```
ThemeCount=theView.GetThemes.Count
if (ThemeCount < 2) then
MsgBox.Info("At least one polygon and one point theme need to be in the
view","")
exit
end
```

' Get user to choose POLYGON theme

```
theThemeList = theView.GetThemes
theSelectedTheme = MsgBox.ChoiceAsString (theThemeList, "Choose
POLYGON theme:", "Available Themes")
if (theSelectedTheme = nil) then
MsgBox.Warning ("No theme chosen for target", "NO SELECTED
POLYGON THEME CHOSEN")
exit
end
```

' Get user to choose POINT theme

```
theSourceTheme = MsgBox.ChoiceAsString (theThemeList, "Choose POINT
theme:", "Available Themes")
if (theSourceTheme = nil) then
 MsgBox.Warning ("No theme chosen for source", "NO POINT THEME
CHOSEN")
 exit
else
 if (theSourceTheme = theSelectedTheme) then
  MsgBox.Warning("the source theme cannot be the same as the target
theme", "SOURCE SAME AS TARGET")
 exit
 end
end
' Get user to choose the ID field from the CCD theme
thefieldList = theSelectedTheme.GetFtab.GetFields
theIDfield = MsgBox.ChoiceAsString (thefieldList, "Choose ID field for CCD
for output theme", "Available fields")
if (\text{thelDfield} = \text{nil}) then
 MsgBox.Warning ("No ID field chosen", "NO ID field")
 exit
end
```

' Get user to choose the ID field from the POINT theme

```
thefieldList = theSourceTheme.GetFtab.GetFields
thePtIDfield = MsgBox.ChoiceAsString (thefieldList, "Choose field for ID for
output theme", "Available fields")
if (theIDfield = nil) then
    MsgBox.Warning ("No ID field chosen", "NO ID field")
    exit
end
```

' Get user to choose the Count field from the POINT theme

```
thefieldList = theSourceTheme.GetFtab.GetFields
theCTIDfield = MsgBox.ChoiceAsString (thefieldList, "Choose field for count
for output theme", "Available fields")
if (theIDfield = nil) then
    MsgBox.Warning ("No count field chosen", "NO count field")
    exit
end
```

' Create a dbf table to take the output from the analysis.

' Table has 3 fields, and origin identifier, a destination identifier and a cost (ie. distance)

theClass = dBASE theFilter = "*.dbf" theExt = "dbf"

theFileName = FileDialog.Put(av.GetProject.MakeFileName("CDint", theExt), theFilter,"Analysis Results Table")

outputVTab = VTab.MakeNew (theFileName, theClass)

origFld = Field.Make("CD_code", #FIELD_LONG, 12, 0) destFld = Field.Make("Buff_id", #FIELD_LONG, 12, 0) measFld = Field.Make("count_id", #FIELD_DECIMAL, 9, 0)

outputFields = {origFld, destFld, measFld}

outputVTab.AddFields(outputFields)

outputVTab.SetEditable(TRUE)

theTargetFTab = theSelectedTheme.GetFtab

theShapeField = theSelectedTheme.GetFTab.FindField("Shape")

' Select source features which fall within each target feature and calculate ' elements of weighted centroid formula

for each tfeature in theSelectedTheme.GetFTab

theSelectedTheme.GetFTab.GetSelection.ClearAll theSourceTheme.GetFTab.GetSelection.ClearAll

theTempShp =
theSelectedTheme.GetFtab.ReturnValue(theShapeField,tfeature)

'Select CCD
theTargetFTab.SelectByPoint(theTempShp.ReturnCenter, 0,
#VTAB SELTYPE NEW)

'MsgBox.Info(theTargetFTab.GetSelection.Count.AsString ++ "selected out of" ++ theSelectedTheme.GetFTab.GetDefBitmap.Count.AsString,"testing")

'Selects the intersections based on selected CCD 'theSourceTheme.GetFTab.SelectByPolygon(theTempShp, #VTAB_SELTYPE_NEW) theSourceTheme.GetETab.SelectByETab/theSelectedTheme.Get

theSourceTheme.GetFTab.SelectByFTab(theSelectedTheme.GetFtab, #FTAB_RELTYPE_HASCENTERWITHIN, 0, #VTAB_SELTYPE_NEW) theSourceTheme.GetFTab.SelectByFTab(theSelectedTheme.GetFtab, #FTAB_RELTYPE_ISWITHINDISTANCEOF, 10, #VTAB_SELTYPE_OR)

av.ShowMsg("Processing Target" ++ tfeature.AsString + ":" ++ theSourceTheme.GetFTab.GetSelection.Count.AsString ++ "sources selected of" ++ theSourceTheme.GetFTab.GetDefBitmap.Count.AsString)

'Get CD Code of CD polygon currently being used to select points cdcode = theSelectedTheme.GetFtab.ReturnValue(theIDfield,tfeature)

For each intersection in theSourceTheme.GetFTab.GetSelection intersect_id =

theSourceTheme.GetFtab.ReturnValue(thePtIDfield,intersection)
 meas_id =

theSourceTheme.GetFtab.ReturnValue(theCTIDfield,intersection)

```
rec = outputVTab.AddRecord
outputVTab.SetValueNumber(origFld, rec, cdcode)
outputVTab.SetValueNumber(destFld, rec, intersect_id)
outputVTab.SetValueNumber(measFld, rec, meas_id)
end
end
```

```
outputVTab.SetEditable(FALSE)
```

' force screen redraw

APPENDIX 2: LAND USE CLASSIFICATION

LANDUSE	GROUP	CLASS
Country Township	Residential	1
Deferred Urban	Residential	1
Historic Residential	Residential	1
Non Private Residential	Residential	1
Residential	Residential	1
Rural Living	Residential	1
Rural residential	Residential	1
Vacant Residential	Residential	1
Commercial	Retail	2
Mixed Uses	Retail	2
Retail - Commercial	Retail	2
Food Industry	Industry	3
Industry	Industry	3
Mine - Quarry	Industry	3
Utility Industry	Industry	3
Conservation	Recreation	4
Golf	Recreation	4
Recreation	Recreation	4
Agriculture	Other	5
Coastal	Other	5
Community Facility	Other	5
Education	Other	5
Excluded	Other	5
Forestry	Other	5
Government Institution	Other	5
Hills face Zone	Other	5
Horticulture	Other	5
Livestock	Other	5
Rural	Other	5
Special Use	Other	5
Watershed Protection	Other	5