

```

/** ----- 08 ROADS -----
/** FILE NAME:                08_Roads.txt
/** AUTHOR:                  RENEE SCHICKER
/** SCRIPT CREATED:          12 JANUARY 2009
/** LAST UPDATED/MODIFIED:    30 SEPTEMBER 2009
/**
/** The scripts may be supplied in a more readily useable format if the work is acknowledged
/** CONTACT:      Renee_Schicker@hotmail.com
/**
/** SCRIPT USED BY:            00_MASTER.txt
/** USES THE SCRIPT:           CheckProgEdit.txt           (CREATED: 02 MARCH 2009)
/**
/** INPUT COVERS:
/**      roads                D:\Renee_GIS\Output_data\Organised\02_Setup\roads
/**      dem_bnd              D:\Renee_GIS\Output_data\Organised\03_DEM\DEM_Bnd
/**
/** OUTPUT COVERS:            region_roads                Roads_Dist        RoadsDist2
/** OUTPUT GRID:              roadsgrid
/** TEMP. COVERS:             rdsbuff%dist_1%              rdsbuff%dist_2%
/**                          rdsbuff%dist_3%              rdsbuff%dist_4%
/**                          rdsbuff%dist_5%              rdb%dist_4%_%dist_5%
/**                          rdb%dist_3%_%dist_5%          rdb%dist_2%_%dist_5%
/**                          rds_buff_all                  Roads_Dist
/**
/** FUNCTIONS USED:           &CALL          &RETURN          &ROUTINE
/**                          &IF &THEN      [EXIST]          KILL
/**                          &TYPE          BUFFER          ADDITEM
/**                          &RUN           EDITCOVER (EC)    EDITFEATURE (EF)
/**                          SELECT         CALCULATE          SAVE
/**                          QUIT (Q)       DROPITEM          &SETVAR
/**
/** HOW CLASSIFIED:           By setting the variables as seen fit based on the literature covered.
/** PURPOSE:                  buffer roads at different distances and union into 1 coverage layer
/**                          intermediate layers are deleted
/**
/** ..... HISTORY .....
/**
/** 15 DECEMBER 2008          3_clip.txt individual clip script created specifically to be run from a
/**                          master script as part of the processing of parameters for Waikato
/**                          region. Important to check input exists before processing.
/** 17 DECEMBER 2008          10_rds_buff.txt , a working adaptation of the Buffer_test.txt test
/**                          script (last modified 18 AUGUST 2008) I didn't get to working stage.
/** 12 JANUARY 2009           10_roads_buff.txt individual script for Waikato region created
/**                          specifically to be run from a master script (0_parent.txt). Keep
/**                          things tidier and easier to follow when hunting down ERRORS
/** 12 FEBRUARY 2009          Can now clip with the digitised regional boundary I made (which has
/**                          a more representative coast line than the EW one) based on the
/**                          district boundaries layer and cut off points based on the EW layer
/** 02 MARCH 2009             CheckProgEdit.txt script added to save having to write the process.
/** 12 MARCH 2009            Modified and updated by adding a set of variables which should
/**                          make changing the distance values a lot quicker (only have to set at

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/** top/start at the "&SETVAR" commands). Have changed file name to
/** 09_roads_buff.txt from 10_roads_buff.txt. Now run from
/** 00_MASTER.txt instead of 0_parent.txt.
/** 27 APRIL 2009 Check script is consistent with others, update script information.
/** Added CLIP rds_buff_all by region_bnd then KILL rds_buff_all
/** afterwards.
/** 30 APRIL 2009 First attempt to rasterise vector data using POLYGRID
/** 31 APRIL-05 MAY 2009 The roads_dist layers rasterised ok, "trapped areas" have the value
/** 0.
/** 20 MAY 2009 Separate Input data and output data directories, so workspace is set
/** to a separate output folder, so reduces the chance of deleting input
/** data by accident.
/** 10 JUNE 2009 Combined Roads content from 04_Clip.txt and 15_Rasterise.txt with
/** 09_roads_buff .txt to make 11_Roads.txt. Have also combined a few
/** of the existing routines (Add_Edit and Edit_Drop) and tidied up
/** some of the processes (Kill, getting rid of Exist_1 and Exist_2).
/** Now clip by DEM_Bnd instead of Region_Bnd.
/** 20 JUNE 2009 Union with DEM_BND and assign all areas outside buffer zones 0.
/** Should save a lot of areas that meet the same criteria as the trapped
/** polygons being assigned -9999 when rasterised.
/** 30 SEPTEMBER 2009 Added separate workspaces for each script, so have to add file path
/** to find input files, also corrected input and output sections.
/*****
/*****

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/* Set variables
&SETVAR dist_1 = 50 /* Lowest value for distance
&SETVAR dist_2 = 100
&SETVAR dist_3 = 250
&SETVAR dist_4 = 500
&SETVAR dist_5 = 1000 /* greatest value for distance

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&CALL Clip_1
&Call Kill
&CALL buffer
&CALL Add_Edit
&CALL union
&CALL kill
&CALL Edit_Drop
&CALL End_Clip
&CALL ALL_AREAS
&CALL Rasterise
&RETURN

```

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/*****
&ROUTINE Clip_1
&IF [EXIST region_roads -cover] &THEN KILL region_roads
CLIP D:\Renee_GIS\Output_data\Organised\02_Setup\roads
D:\Renee_GIS\Output_data\Organised\03_DEM\DEM_Bnd region_roads LINE 1      /*      Clip
ROADS
&TYPE roads clipped
&RETURN

```

```

/*****
&ROUTINE buffer
&TYPE running roads buffer process...
BUFFER region_roads rdsbuff%dist_1% # # %dist_1% # LINE ROUND
&Type buffer distance %dist_1% done
BUFFER region_roads rdsbuff%dist_2% # # %dist_2% # LINE ROUND
&Type buffer distance %dist_2% done
BUFFER region_roads rdsbuff%dist_3% # # %dist_3% # LINE ROUND
&Type buffer distance %dist_3% done
BUFFER region_roads rdsbuff%dist_4% # # %dist_4% # LINE ROUND
&Type buffer distance %dist_4% done
BUFFER region_roads rdsbuff%dist_5% # # %dist_5% # LINE ROUND
&Type buffer distance %dist_5% done
&RETURN

```

```

/*****
&ROUTINE Add_Edit
&TYPE add a column to rbuff_25 and add buffer distance values...
/* add string class for id
/* additem <in_info> <out_info> <item_name> <item_width> <output_width> <item_type>

```

```

ADDITEM rdsbuff%dist_1%.pat rdsbuff%dist_1%.pat buff_dist1 5 5 I
ADDITEM rdsbuff%dist_2%.pat rdsbuff%dist_2%.pat buff_dist2 5 5 I
ADDITEM rdsbuff%dist_3%.pat rdsbuff%dist_3%.pat buff_dist3 5 5 I
ADDITEM rdsbuff%dist_4%.pat rdsbuff%dist_4%.pat buff_dist4 5 5 I
ADDITEM rdsbuff%dist_5%.pat rdsbuff%dist_5%.pat buff_dist5 5 5 I

```

```

/** MAKE Edits
&TYPE entering buffer distances into new individual buff_dist attribute columns
/* enter buffer distances
/* Need to use ArcEdit so run the associated script to do this
&RUN d:\renee_gis\scripts\CheckProgEdit.txt

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```

EC rdsbuff%dist_1%
EF polygon
SELECT for INSIDE = 100
CALCULATE buff_dist1 = %dist_1%
SAVE

```

```

EC rdsbuff%dist_2%
EF polygon
SELECT for INSIDE = 100

```

```
CALCULATE buff_dist2 = %dist_2%  
SAVE
```

```
EC rdsbuff%dist_3%  
EF polygon  
SELECT for INSIDE = 100  
CALCULATE buff_dist3 = %dist_3%  
SAVE
```

```
EC rdsbuff%dist_4%  
EF polygon  
SELECT for INSIDE = 100  
CALCULATE buff_dist4 = %dist_4%  
SAVE
```

```
EC rdsbuff%dist_5%  
EF polygon  
SELECT for INSIDE = 100  
CALCULATE buff_dist5 = %dist_5%  
SAVE  
Q  
&RETURN
```

```
/*****
```

```
&ROUTINE union
```

```
/*UNION <in_cover> <union_cover> <out_cover> {fuzzy_tolerance} {JOIN | NOJOIN}
```

```
&IF [EXIST rds_buff_all -COVER] &THEN KILL rds_buff_all ALL
```

```
&TYPE multi stage union begins...
```

```
UNION rdsbuff%dist_4% rdsbuff%dist_5% rdb%dist_4_%dist_5%
```

```
UNION rdsbuff%dist_3% rdb%dist_4_%dist_5% rdb%dist_3_%dist_5%
```

```
UNION rdsbuff%dist_2% rdb%dist_3_%dist_5% rdb%dist_2_%dist_5%
```

```
UNION rdsbuff%dist_1% rdb%dist_2_%dist_5% rds_buff_all
```

```
&RETURN
```

```
/*****
```

```
&ROUTINE kill
```

```
&IF [EXIST rdsbuff%dist_1% -COVER] &THEN KILL rdsbuff%dist_1% ALL
```

```
&IF [EXIST rdsbuff%dist_2% -COVER] &THEN KILL rdsbuff%dist_2% ALL
```

```
&IF [EXIST rdsbuff%dist_3% -COVER] &THEN KILL rdsbuff%dist_3% ALL
```

```
&IF [EXIST rdsbuff%dist_4% -COVER] &THEN KILL rdsbuff%dist_4% ALL
```

```
&IF [EXIST rdsbuff%dist_5% -COVER] &THEN KILL rdsbuff%dist_5% ALL
```

```
&IF [EXIST rdb%dist_4_%dist_5% -COVER] &THEN KILL rdb%dist_4_%dist_5% ALL
```

```
&IF [EXIST rdb%dist_3_%dist_5% -COVER] &THEN KILL rdb%dist_3_%dist_5% ALL
```

```
&IF [EXIST rdb%dist_2_%dist_5% -COVER] &THEN KILL rdb%dist_2_%dist_5% ALL
```

```
&RETURN
```

```
/*****
```

&ROUTINE Edit_Drop

ADDITEM rds_buff_all.pat rds_buff_all.pat buff_dist 5 5 I

/* Need to use ArcEdit so run the associated script to do this

&RUN d:\renee_gis\scripts\CheckProgEdit.txt

&TYPE entering all buffer distances into new buff_dist attribute column

/* enter buffer distances

EC rds_buff_all

EF polygon

SELECT for buff_dist5 = %dist_5%

CALCULATE buff_dist = %dist_5%

SELECT for buff_dist4 = %dist_4%

CALCULATE buff_dist = %dist_4%

SELECT for buff_dist3 = %dist_3%

CALCULATE buff_dist = %dist_3%

SELECT for buff_dist2 = %dist_2%

CALCULATE buff_dist = %dist_2%

SELECT for buff_dist1 = %dist_1%

CALCULATE buff_dist = %dist_1%

/* SELECT buff_dist = 0

/*DELETE

SAVE

Q

/* delete unneeded variables since they've served their purpose

/* delete temporary attribute columns

&TYPE goodbye temporary buff_dist variables

DROPITEM rds_buff_all.pat rds_buff_all.pat BUFF_DIST1 BUFF_DIST2 BUFF_DIST3 BUFF_DIST4

BUFF_DIST5 BUFF_DIST6

DROPITEM rds_buff_all.pat rds_buff_all.pat RDSBUFF%dist_1%# RDSBUFF%dist_1%-ID

DROPITEM rds_buff_all.pat rds_buff_all.pat RDSBUFF%dist_2%# RDSBUFF%dist_2%-ID

DROPITEM rds_buff_all.pat rds_buff_all.pat RDSBUFF%dist_3%# RDSBUFF%dist_3%-ID

DROPITEM rds_buff_all.pat rds_buff_all.pat RDSBUFF%dist_4%# RDSBUFF%dist_4%-ID

DROPITEM rds_buff_all.pat rds_buff_all.pat RDSBUFF%dist_5%# RDSBUFF%dist_5%-ID

DROPITEM rds_buff_all.pat rds_buff_all.pat Buff_dist1 Buff_dist2 Buff_dist3

DROPITEM rds_buff_all.pat rds_buff_all.pat Buff_dist4 Buff_dist5

DROPITEM rds_buff_all.pat rds_buff_all.pat RDB%dist_2%_%dist_5%# RDB%dist_2%_%dist_5%-ID

DROPITEM rds_buff_all.pat rds_buff_all.pat RDB%dist_3%_%dist_5%# RDB%dist_3%_%dist_5%-ID

```
DROPITEM rds_buff_all.pat rds_buff_all.pat RDB%dist_4%_%dist_5%# RDB%dist_4%_%dist_5%-ID
&RETURN
```

```
/******
```

```
&ROUTINE End_Clip
```

```
&IF [EXIST Roads_Dist -COVER] &THEN KILL Roads_Dist ALL
```

```
CLIP rds_buff_all D:\Renee_GIS\Output_data\Organised\03_DEM\DEM_Bnd Roads_Dist POLY 1
```

```
&IF [EXIST rds_buff_all -COVER] &THEN KILL rds_buff_all ALL
```

```
&RETURN
```

```
/******
```

```
&ROUTINE ALL_AREAS
```

```
/** Cover extent of the region so don't have missing pieces.
```

```
&IF [EXIST Roads_Dist2 -COVER] &THEN KILL Roads_Dist2 ALL
```

```
UNION Roads_Dist D:\Renee_GIS\Output_data\Organised\03_DEM\DEM_Bnd Roads_Dist2
```

```
ADDITEM Roads_Dist2.pat Roads_Dist2.pat Road_dist 5 5 I
```

```
/* Need to use ArcEdit so run the associated script to do this
```

```
&RUN d:\renee_gis\scripts\CheckProgEdit.txt
```

```
&TYPE entering all buffer distances into new Road_dist attribute column
```

```
/* enter buffer distances
```

```
EC Roads_Dist2
```

```
EF polygon
```

```
SELECT ALL
```

```
CALCULATE Road_dist = -9999
```

```
SELECT for GRID-CODE = 1
```

```
CALCULATE Road_dist = 0
```

```
SELECT for buff_dist = %dist_5%
```

```
CALCULATE Road_dist = %dist_5%
```

```
SELECT for buff_dist = %dist_4%
```

```
CALCULATE Road_dist = %dist_4%
```

```
SELECT for buff_dist = %dist_3%
```

```
CALCULATE Road_dist = %dist_3%
```

```
SELECT for buff_dist = %dist_2%
```

```
CALCULATE Road_dist = %dist_2%
```

```
SELECT for buff_dist = %dist_1%
```

```
CALCULATE Road_dist = %dist_1%
```

```
SAVE
```

```
Q
```

```
DROPITEM Roads_Dist2.pat Roads_Dist2.pat DEM_BND# DEM_BND-ID GRID-CODE
```

```
DROPITEM Roads_Dist2.pat Roads_Dist2.pat Roads_Dist# Roads_Dist-ID Buff_dist  
&RETURN
```

```
/*****
```

```
&ROUTINE Rasterise
```

```
&IF [EXIST roadsgrid -GRID] &THEN KILL roadsgrid ALL
```

```
POLYGRID roads_dist2 roadsgrid Road_DIST
```

```
25
```

```
y
```

```
&RETURN
```