

Appendix D: User Manual for the RAMS and RAMS Spreadsheet

RAMS User Manual

A. Basics

a. Excel

The RAMS.xls file is the primary file for the RAMS. From within this file, data can be manipulated and added as it is collected in the field. The file is a combination of: drop down lists (for inputting data), formulas (for calculating risk values), information required to produce a Google Earth file (contained primarily in hidden columns), and buttons to create external files and add new sites.

Full descriptions of cells, columns, and buttons can be found in Section B of this manual.

b. Google Earth

Google Earth is used as the mode of visualization for the RAMS. It was chosen because it is user friendly and is readily available. Google Earth has several versions. Google Earth is free, while Google Earth Pro is available for purchase (<http://earth.google.com/>). For manipulating and viewing data, the free version of Google Earth can be used. However, for the addition of new sites or re-sizing old ones, Google Earth Pro is recommended because it can import .SHP files (drawings that contain geo-references within them).

Besides viewing the RAMS.xls file, Google Earth can be used to create layers within the RAMS excel sheet. These layers include: riverbank shading, site image location, and site locations. The creation and manipulation of these layers is discussed in Section C of the manual.

c. Autocad

Two versions of Autocad can be used to create the riverbank shading: Civil 3D and Maps. Either program may be used as they both contain a feature that allows the user to export drawings as SHP files. These files can subsequently be imported into Google Earth. While it is not necessary to use these programs, they save time and create a cleaner look than if the user manipulates the shading directly through Google Earth.

A file containing sample shading and the river coordinate system is included in this manual. It will be discussed in further detail in Section D of this manual.

d. Google Account

An integral part of the RAMS program, is the Google account. This account contains the multimedia and external files for the system. The Google account is a free, but it has limited storage offered. If at any point storage reaches capacity, Google offers a pay service that can increase the amount of storage offered.

While there are several services available with a Google account, this system uses only three of them: Picasa, Video, and Page Creator. Picasa contains all images, image descriptions, and slide shows that are seen in the RAMS, while Video contains all videos. Page Creator stores all external Google Earth files such as the site image locations, river coordinate system, outfall locations, primary dike system, and site lengths.

Accessing these services, logging in, and manipulating and adding files to the system are discussed in full detail in section E of this user manual.

B. Excel

The list below contains a description of the cells in the RAMs spreadsheet. In general, the majority of these cells should never be altered by the user and are identified accordingly. All cells that the user should not alter are locked or hidden. For manipulation of the current data, the user would not be required to alter cells that are not present when the RAMS spreadsheet is opened. When adding a new site, cells requiring edits will be revealed to the user.

a. Cells

Row 3: This is the "Use" row. When a cell in this row is empty, the column beneath is not directly used in creating the Google Earth file. When the cell contains a character (usually an "x"), the column beneath is used in creating the Google Earth file. This row should remain untouched as all necessary columns are already marked.

Row 4: This row can be altered, but never left empty. Currently, any cell that does not have text is filled with a single space bar keystroke and all cells with text should be left the same.

Rows 5 through 8: These rows are headings and can be altered as required.

- Cell 7 contains the macro buttons that implement visual basic code and should remain untouched.

Column A: Starting from row 8, these are the names of the sites. They are only for the

user's reference and do not impact the formulas throughout the sheet. The user can alter these in any way.

Column B: This column is the "ID" column and is a Google Earth reference cell. When a new site is added to the list, the user should fill in this cell with a name that is easily recognizable as the site. This cell is never directly visible within the visualization system, but is used to create the "next", "previous", and "current site" links within the Google Earth Balloons.

Column C: Another column that Google Earth references, it is used to separate the sites into organized folders as seen in the toolbar in Google Earth when the system is loaded. When a new site is added, a folder should be selected from the drop-down list within the cell to maintain system organization.

Column D: This is the name of the site as it will appear within the Google Earth visualization tool. When a new site is added, this cell should be filled out (most likely with something similar to that found in Column A).

Column E: This is the latitude value of the placemark relevant to each site converted from latitude and longitude to decimal notation. To change a current site's placemark location, follow the same procedure for a new site (as shown in Section F of this manual).

Column F: This is the longitude value of the placemark relevant to each site, converted from latitude and longitude to decimal notation (in decimal notation). To change a current sites placemark location, follow the same procedure for a new site (as shown in Section F of this manual).

Column G: This column contains a formula that should not be altered. It is used to calculate the top 12 priority sites by risk value and make them visible at the startup of the visualization tool. To make changes to the formula, see Section B.b of this manual).

Column H: This column contains values for the snippet that will be used in Google Earth. The snippet is a brief description that is displayed below the site name within the toolbar in Google Earth. These cells can remain empty or be filled in.

Column I: The description column should not be changed and is locked. These cells reference all the HTML cells found at the end of the excel sheet and is used in Google Earth to create the balloon layouts for displaying data.

Column J: This column can be used for any notes that the user would like to make regarding each site, but the notes will not appear in Google Earth.

Column K: This column is used for a description of each site. The information in this column will appear within the Google Earth Balloon related to each site.

Columns L through CN: This range of cells contains site specific data collected during a field reconnaissance for each site. Cells that can be changed contain drop-down lists. Data choices are limited. All other cells contain formulas for calculating risk and are locked. There are hidden columns at the transition between probability and consequence factors that contain more consequence factors with a zero weighting. To include or make changes to these hidden columns, unhide them and assign values both in the Kml1 sheet, probability sheet and consequence sheet.

Columns CP through DE: This range of cells contain the HTML code that displays the data within the Google Earth balloon for each site. These cells are locked and hidden and it is recommended that they are not altered without knowledge of the HTML markup language.

Column DG: This column contains the background color of the Google Earth Balloons (in hexadecimal color format). These cells are locked and remain hidden. It is not necessary to alter this column.

Column DH: This column is referenced by Google Earth and influences the style of the balloons that are displayed. This column remains hidden and locked, and it is not recommended that it be altered.

Column DI: This column is referenced by Google Earth to create the placemarks of each site. If a different placemark is desired, this cell can be altered. However, the cell is hidden and remains locked so it is not necessary to change.

Column DJ: This column is used in creating the site shading to indicate risk level for publicly owned riverbank property. These values will need to be changed if a site length is altered or if a new site is created. These values were obtained through Autocad and Google Earth, and a detailed description of the process can be found in Section F of this manual.

Column DK and DL: These two columns are identical and contain formulas to assign colors to each site depending on their level of risk. These cells remain locked and hidden and should not be altered.

Column DN: This column contains the HTML code to create the slideshow within each balloon. It remains hidden and locked and should not be altered.

Column DO: This column is referenced by Column DN and contains the link to the slideshow found in Google Picasa. These cells do not need to be altered when pictures are added or changed at an existing site. A link can be added when a new site is created. For detailed instructions, see Section F of this user manual.

Column DP: This column contains the HTML code necessary to create the links to images and videos within the Google Earth Balloon. This column remains hidden and locked and should not be altered.

Column DQ: This column contains links from Page Creator so the location of each image can be displayed within Google Earth. To add this feature to a new site, paste the Page Creator link into the cell corresponding to the correct site. For detailed instructions, see Section F of this user manual.

Column DR: This column creates the link to the site images, it is locked and hidden and should not be altered.

Column DS: This column contains the HTML code to create the site title and display the risk levels in the Google Earth balloons. These cells remain hidden and locked and should not be altered.

Column DT: This column contains the HTML code to display the probability and consequence factors within the Google Earth balloon. These cells remain hidden and locked and should not be altered.

Column DU to DX: These columns contain the html and Google Earth code to create the links to the next, previous, and current site. They remain hidden and locked and should not be altered.

Column DY: This column contains the HTML code to display the site description within the Google Earth balloon. These cells remain hidden and locked and should not be altered.

Column DZ to EB: These columns can be filled with a link to videos from Google Video, if available. These cells will become visible when a new site is added and the user may add links if desired. For detailed instructions, see Section F.

Column EC to EE: These columns contain formulas to determine if video links are present. If links are present, they will appear in the Google Earth balloon. These cells remain hidden and locked and should not be altered.

Column EF: This column contains the HTML code to display the Risk factor within the Google Earth balloons. These cells remain hidden and locked and should not be altered.

Cell K2: This cell must contain a valid path for the Google Earth file to be saved to. If an invalid path is entered, the user will be notified with an error message. The current date will be automatically appended to the filename the user selects when saved. If two files are created on the same day, the first file will be overwritten.

Cell M2: This cell contains the name of the Google Earth file as it will appear within Google Earth.

Cell O2: This cell is used for offsetting cells and should be left empty.

Cell Q2: This cell contains the link to the Legend found on Google Picasa and is displayed within Google Earth as an overlay. To make edits to this legend, see Section E.b.iv of this user manual.

Cell S2: This cell sets the number of headings that exist below Row 4 and Row 9 (the first site). This cell is locked and it should not be altered.

Cell U2: This cell is for reporting purposes only. It indicates how many rows of data are within the sheet.

Cell X2: This cell must contain a valid path for the Top 12 priority list to be saved to, an invalid path will result in an error. The current date will be automatically appended to the filename.

Cell Z2: This cell contains the network links for the CoW's river co-ordinate system (links to Google Earth files found on Page Creator) and Cell AB2 contains the name of this network link as it will be displayed in the Google Earth legend. For detailed instructions for changing network links, see Section E.c.iv of this user manual.

Cell AD: This cell contains the link to the City of Winnipeg's logo that is overlain in Google Earth. Detailed instructions for changing this cell are provided in Section E.b.iv of this user manual.

Cell AF: This cell contains the path to where Google Earth is installed on the user's computer. By default, this value is set to "C:\Program Files\Google\Google Earth\googleearth.exe". It is the responsibility of the user to ensure that this path is correct for where Google Earth is installed on their computer.

Cells AH2 through AM2: These cells contain network links and names for private and public shading, site lengths and types. For detailed instructions, see Section E.c.iv of this user manual.

Cell AO2: This cell is used for a second logo (The University of Manitoba) which is displayed in Google Earth, directly below the City of Winnipeg logo. For detailed instructions on how to change this logo, see Section E.b.iv of this user manual.

Cells AQ2 through AU2: These cells contain the last two network links for this system. The network links are: outfall locations and the primary dike system. For detailed instructions, see Section E.c.iv of this user manual.

b. Formulas

The primary formula used throughout this Excel sheet to calculate the Risk values are VLOOKUPs.

Sample: IF(L9>0, VLOOKUP(L9, Probability!\$B\$14:\$D\$21, 3, FALSE), 0)

This formula examines cell L9 to see if there is a value in it. If there is, it compares that value against a table in sheet Probability in range B14:D21. If that value exists, it takes a value from the third column in that table and fills the cell containing the formula, if it does not exist, it is assigned a value of 0.

Formulas used for Google Earth purposes:

Largest Values: IF(CL15>LARGE(\$CL\$9:\$CL\$53, 13), "x", "")

This formula checks if CL15 is among the top 12 values in column CL. If it is, it is assigned the character "x", if not, it is left blank. This is useful to make the top 12 most critical sites appear at the launch of the Google Earth file. To change the size of the list, alter the value "13" to get you a site list of n-1 size.

All other formulas are used for the purpose of HTML coding and color assignment and are either straight text with cell references or IF statements.

c. VBA active control (buttons in cell A7)

i. Important

This button will provide the user with a brief overview of the excel sheet when pressed.

ii. Create KML

When this button is clicked, the user is asked if they would like to launch Google Earth. If "yes" is chosen, the Google Earth file is generated and launched in Google Earth. If "no" is chosen, the Google Earth file is generated but Google Earth is not launched.

iii. Priority List

When the priority list button is pressed, a priority list with 12 sites is generated in the sheet "Top 12", the twelve sites that have the highest risk values. The Top12 sites are copied and pasted into Microsoft Word so printing is easy.

iv. Add a Site

When this button is clicked, a new site will be immediately added below the cell that is selected. The user must click on the name of an existing site in Column A so a site can be added below the current ones. The user is prompted with a message asking how many sites need to be

added. All sites will be added below the currently selected site. After pressing the button, all formulas will be copied down and cells requiring user input from the user will be unhidden. The user should attempt to fill these cells to the best of their ability.

v. Rehide

Pressing this button will hide all columns that were unhidden when “Add a Site” was pressed.

d. Troubleshooting

- If error occur with respect to the VBA code, two sources of error are common:

1. The filename or path in cells L2, X2, or AF2 are invalid. It is the responsibility of the user to ensure these paths are correct.

2. A cell that the user should not have changed now contains an invalid reference. In such cases, the user should press “ctrl+a” followed by “ctrl+shift+0” to unhide all cells in the sheet. Look for any cells that may contain “#REF” in them. The user will then need to determine which cells are incorrectly referenced. Another option is to load a backup working version of the excel sheet.

- 3. Site shading or site pushpins are not revealed. This means that there is an empty cell in Row 4. The user should ensure all cells in Row 4 contain a space (enter cell and press space bar) or text.

C. Google Earth

Google Earth is the application that is linked with RAMS excel sheet. Using the data collected and input into the excel sheet, the button “Create KML” generates a Google Earth file that is loaded into the visualization tool. Initially, the user will see 12 sites highlighted by a bulls-eye, two logos in the top left corner, a legend in the bottom right, and site shading that represents the risk level of the Top12 sites.

a. Viewing the generated Google Earth file

The user may click on any bulls-eye to view a balloon containing images and data about that site. From within each balloon, the user may move to a site upstream or downstream of the current site. To increase viewing speed, Google Earth will not transport the user upstream or downstream, until the “current site” link is clicked on in the top left corner of the balloon. On the left hand side of the balloon, there are links to click to upload site image locations or videos of the site. The site images link, when clicked, will load up new pushpins showing photograph locations, dates and descriptions. The videos will appear in a separate window when clicked, linking the user to the Google Video website.

On the left hand side of the Google Earth window, there is a toolbar containing folders. These folders contain the sites that are located in the RAMS spreadsheet. To display the sites, the user must click on the highest order folder check box. To display and visit specific sites, it is necessary to navigate the folder hierarchy by double clicking (to visit) or clicking the checkbox (to display) the specific site.

At the bottom of the parent directory, there are five network links. The first network link, the River Coordinate System, is already displayed. To enable the other four network links, the user must click the box adjacent to each title.

b. Getting data from Google Earth into Excel

The user, at times, will need data from Google Earth for both placemark locations and polygon coordinates for site shading.

To obtain latitude and longitude data for the placemarks, the user must create a new pushpin and move it to the appropriate location. Right clicking on the site and selecting “properties” will open up a new window. The user will need to copy the coordinates into the corresponding cells in the excel sheet. This method can be used for altering old sites as well, but instead of creating a new pushpin, “properties” for an existing site can be selected before the pin is moved to the site.

To obtain data for polygon coordinates, a similar procedure is followed. Once a polygon has been imported from Autocad (see Section D.b of this user manual), the user will need to right click on the polygon title in the side toolbar and select “copy”. The user will need to open a text program, such as Microsoft Word, Notepad, or Textpad, and select “paste” from the edit toolbar, or press “ctrl+v”. A list of text will be displayed. Near the bottom of this list, a set of numbers can be found. The numbers can be copied and pasted into the corresponding cell in Excel. A single quotation mark must precede the numbers to indicate that this information is not a formula.

c. Editing Google Earth Files

i. Site Image Locations

When new images are added to a site, the user will need to edit some Google Earth files. This editing is completed by acquiring the appropriate file from Google Page Creator (they are all named according to the site they represent) and opening it in Google Earth. Once in Google Earth, it is possible to expand the parent directory and add or remove pushpins.

Once the pushpins have been added, right click on properties and move the pushpin to the desired location. In properties, enter the photograph description and image link (acquired from Google Picasa) by following the HTML code template. After finishing press "Okay".

After all pushpins have been added and all information incorporated, including links to photographs, close the parent directory. Photographs are entered in Picasa so photographs can be linked to pushpin locations. To enter a photograph, left click on a photograph in Picasa and click properties. Copy the web address and paste the web address under the description for each pushpin. Include the photograph description and do not alter the format or font size. Ensure the parent directory has box ticked so all photographs will be saved. Right click on the parent directory and select "Save Place As". Save the file as the default name to a known directory and go into Page Creator and upload the file (it will automatically overwrite the previous version).

ii. Site Lengths

If a site length changes or a new site is added, the user will need to open the Site Lengths file from Page Creator. Once loaded in Google Earth, the user may redraw a site length by first deleting it from the side toolbar and then selecting the "Path" button in the top toolbar. If it is only a slight shortening of the site, the user may access the "Properties" of this site and select points, drag, and move them to new locations. Once finished, close the parent directory, ensuring the box is checked and "Save Place As" as the default name, then upload back to Google Earth using Page Creator.

iii. Private and Public Shading

If any changes are made to the Private or Public shading, the user will need to make the edits in Autocad (see Section D.b). It is necessary to modify the private and property at different times by turning layers on and off in the Autocad file. In addition, once a file has been altered, it will need to be imported independently of the other files. After completing the edits in Autocad, open the Public and Private shading file from Page Creator in Google Earth, expand the parent directory to the folder that the user requires (ie. private, public or property to characterize further) and delete the contents of the folder you made changes to. Now import the SHP file that was recreated and place it into the appropriate folder. "Save Place As" as the default name and upload back onto Page Creator.

D. Autocad

a. Creating SHP files

Both Autocad Civil 3D and Autocad Maps are capable of exporting SHP files from DWG files. To import a .shp file, the top toolbar contains a button called "Map". After selecting "Map", select "Tools" and then "Export". Name the file and check "Polygon" (box). "Manually Select Points", and under "Options" select "treat closed polylines as polygons". After these steps are done, click the button beside "Manually Select Points" and select the polylines that need to be exported. Once done, hit enter and click "Okay".

b. Creating a new site

The user will need to draw a closed polyline at the coordinates between the desired riverbank co-ordinates. The River Coordinate System contains 10m interval markings and offset lines. The user must draw lines out from the appropriate riverbank coordinate to a point perpendicular to the offset lines. After this is complete, set all osnaps to "endpoint" and draw a polyline around the desired region, snapping to each endpoint, hitting "c" and then "enter" when finished. Follow the same procedure for exporting a SHP file that was previously mentioned.

The user will then need to remove the appropriate polylines from the private or public shading drawings and re-export those to SHP files. The edited .shp file will need to be imported into Google Earth (as per the previous steps).

E. Google Account

a. Logging in

Go to www.google.com, click "sign in" in the top right corner, type in username "cowrams" followed by password given. After logging in, click on the link "My Account" in the top right corner and the user will be able to visualize all services. For the RAMS, only Picasa, Page Creator, and Google Video are used. Click whatever option is desired.

b. Picasa

i. Adding a new site

To add a new site, click the "create album" button and name it appropriately.

ii. Adding Photos

To add a photo, click on the desired album, and press "Upload Photo Button" on the left hand side. Browse the directories to select the desired

photos to upload. To add comments to the photos, click the image in the album and then click on the “comments” below the image. The comments are typed into this location.

iii. Putting photos into RAMS

To acquire a slideshow, click the appropriate album, and then “embed slideshow” on the left hand side of the screen. A new window will popup containing options and code. Select “Large” and enable captions. Click the box containing the code and copy the code into the appropriate cell in Excel.

To include photos in the image location files for a site, for the desired picture, right click, select “properties” and then paste into the appropriate spot in the description tag of the placemark.

iv. Editing Logos and Legend

A user can create or edit the current logos and legend and upload them to the “miscellaneous” album in Picasa. It is possible to delete the old legend or logos, or keep them for future reference. Once a new logo or legend has been uploaded, click on the image and on the right hand side is an option to “link to photo”. Select “link photo” and copy the code immediately below. Paste this code into the appropriate cell in Excel.

c. Page Creator

i. Current Files

Google Page Creator hosts the site image locations, site lengths, primary dike system, river coordinate system, outfall locations, and public/private shading Google Earth files. These files are linked to the Excel spreadsheet and the Google Earth interface.

ii. Adding a file

To add a new site or replace an existing one, log into the Google account and click on the Page Creator link. Select “upload” in the bottom right corner of the screen and browse for the desired file that you created earlier. The file that was created earlier in GE was saved as a separate .kmz file. To delete a file, click on the trash can adjacent to the file to be removed.

iii. Linking from Excel

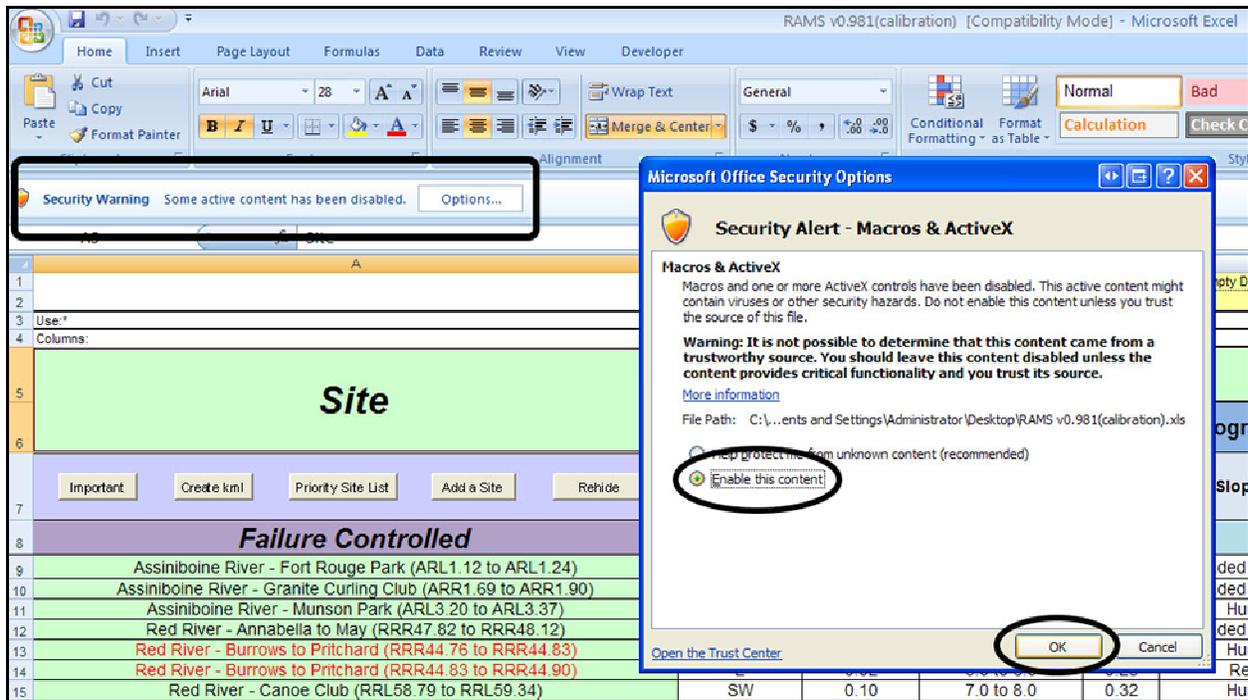
If a new site image location file is created, a new link will be added in Page Creator. When a new site is added, the user must right click on the newly uploaded file and select “properties”. The link must be pasted into the appropriate excel cell.

d. Google Video

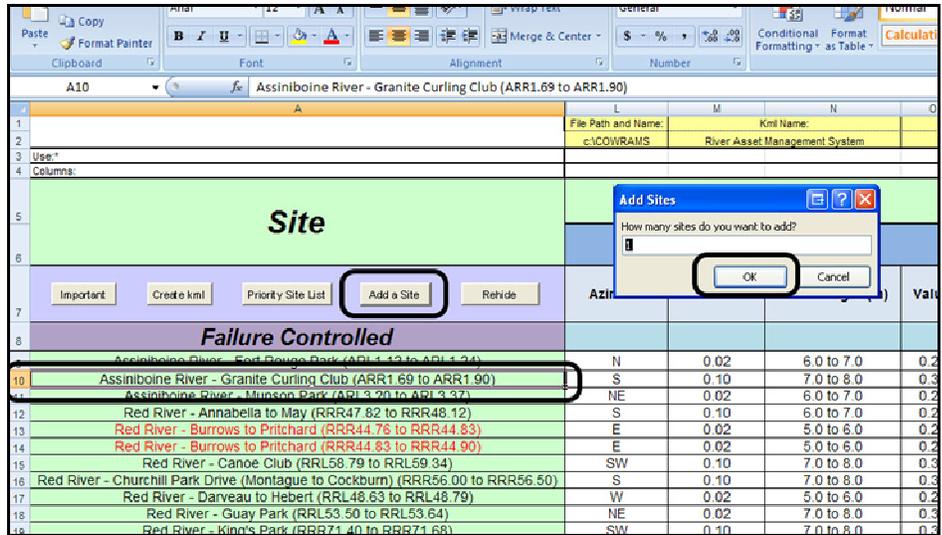
To access the Google Video service, it is necessary to sign in at the google.com homepage and select “My account”. Click on “Uploaded Videos” to view all videos in the account. To add a new video, select “upload video” and fill out the appropriate information. To link to a video, right click on the link to the video and select “properties”. Paste the code into the appropriate cell in Excel.

F. Site Creation Walkthrough (Step-by-Step)

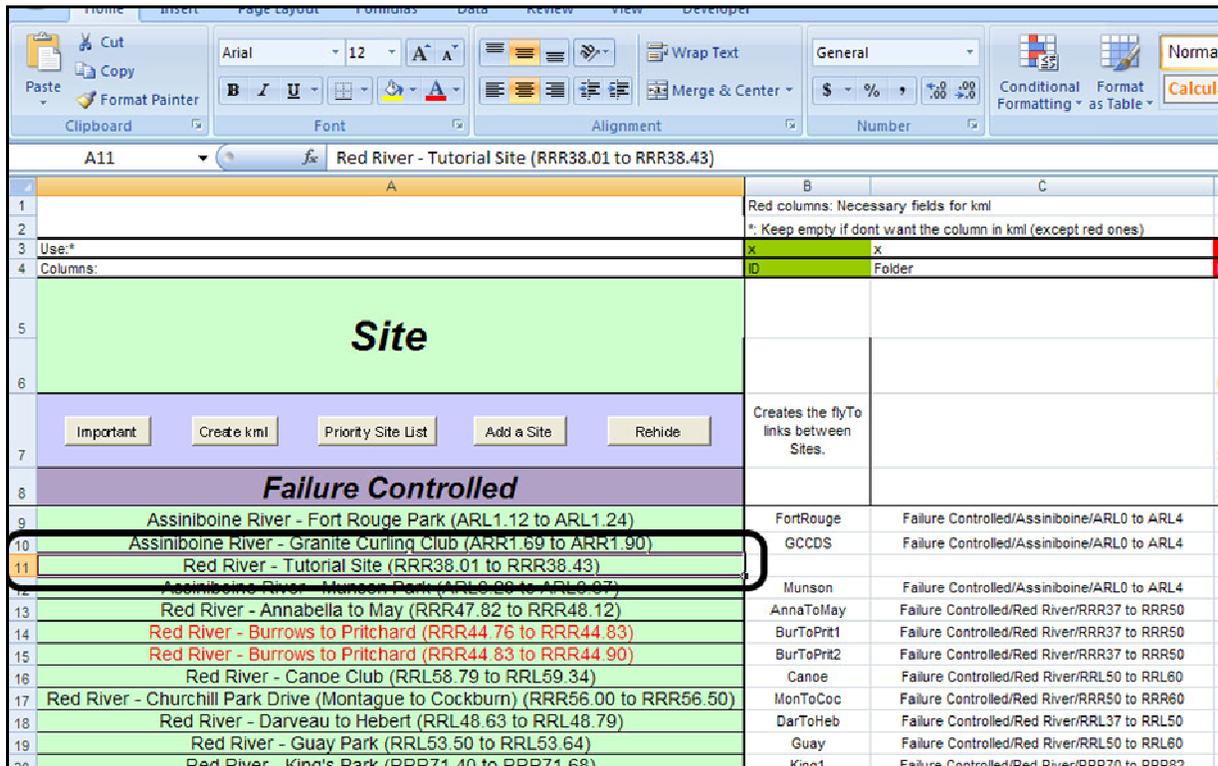
1. When opening the RAMS excel sheet, the user will be given a Security Warning. The user should click on the “Options...” button, “Enable this content” and then “OK”. Note: the locations that need to be clicked are marked in black.



2. The user is ready to add a new site to the list. First click on the site directly above where a new site needs to be added. In this example, a new site is being added directly below the Granite Curling Club (cell A11). Therefore, this cell will be selected, and the “Add a Site” button will be pressed. One site will be added. Note: all buttons or cells that need to be pressed are circled in black.



3. A new row has been inserted directly below Granite Curling Club and therefore some cells have been revealed. The title of this new site will be "Tutorial Site". It will be given coordinates at the north end of the Red River, as an example.

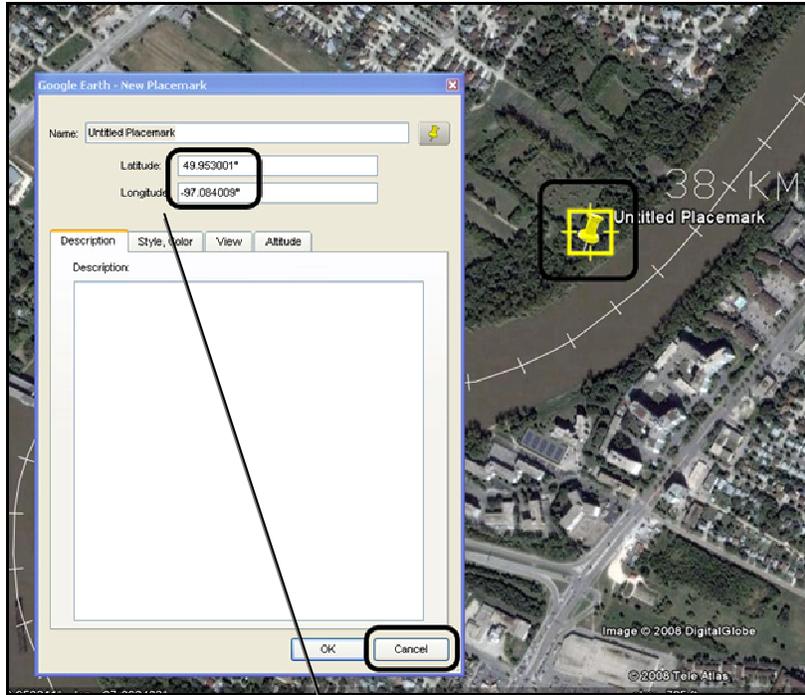


4. New cells have been revealed. Begin by filling in the ID, Folder, and Name cells. The ID cell should have a simple but recognizable name for the current site. This name is used to create links to previous, next, and current sites, and will never appear. The Folder column contains a

drop down list of possible riverbank locations. The Name column will contain “Tutorial Site (RRR38.01 to RRR38.43)” and will appear with that name in the Google Earth system.

Alignment	Number	Connecting to	Styles
	B	C	D
	Red columns: Necessary fields for kmf		
	* Keep empty if dont want the column in kmf (except red ones)		
	x	x	
	ID	Folder	Name
			Heading
			Subheading
			Subheading
	FortRouge	Failure Controlled/Assiniboine/ARL0 to ARL4	Fort Rouge Park (ARL1.12 to ARL1.24)
	FortRouge	Failure Controlled/Assiniboine/ARL0 to ARL4	Fort Rouge Park (ARL1.12 to ARL1.24)
	Tutorial	Erosion Controlled/Assiniboine/APP0 to APP4	Tutorial Site (RRR38.01 to RRR38.43)
	Tutorial	Erosion Controlled/Assiniboine/APP0 to APP4	Tutorial Site (RRR38.01 to RRR38.43)
	AnnaToMa	Erosion Controlled/Assiniboine/APP12 to APP18	Annabella to May (RRR47.62 to RRR48.12)
	BurToPri1	Failure Controlled/Red River/RRR50 to RRR60	Burrows to Pritchard (RRR44.76 to RRR44.83)
	BurToPri2	Failure Controlled/Red River/RRR70 to RRR82	Burrows to Pritchard (RRR44.83 to RRR44.90)
	Canoe	Failure Controlled/Red River/RRR137 to RRR150	Canoe Club (RRL58.79 to RRL59.34)
	MonToCoc	Failure Controlled/Red River/RRR50 to RRR80	Churchill Park Drive (Montague to Cockburn) (RRR56.00 to RRR56.50)
	DarToHeb	Failure Controlled/Red River/RRL37 to RRL50	Darveau to Hebert (RRL48.63 to RRL48.79)

5. It is necessary to find the coordinates of the site. Launch Google Earth and open up the River Coordinate System (either from the CD provided, a previously generated RAMS file, or by clicking the link in Page Creator). Second, click the “add a placemark” button (yellow pushpin at top of Google Earth interface) and move the placemark by clicking on it, holding down the mouse button, and moving the pushpin. The pushpin has been moved to a location approximately in the middle of the site. Copy and paste the displayed coordinates into excel (Cancel can be selected once coordinates are copied). Note: the latitude and longitude coordinates can be changed to decimal degrees under “Tools” and “GE Options”.



*To copy, highlight the values (minus the degrees symbol), right-click and select copy or press “ctrl+c”

	E	F	H	
	Latitude	Longitude	Snippet	ANY NO
ite				
Site List Add a Site Rehide			Brief Descript can go here (but not needed)	This Co for not will not a Google
Controlled				
ge Park (ARL1.12 to ARL1.24)	49.882401	-97.141395	Fort Rouge Park	
ing Club (ARR1.69 to ARR1.90)	49.881947	-97.149943	Granite Curling Club DS	
(RRR38.01 to RRR38.43)	49.953001	-97.084009		
n Park (ARL3.20 to ARL3.37)	49.874881	-97.168488	Munson Park	
ay (RRR47.82 to RRR48.12)	49.901542	-97.124806	Annabella to May	
hard (RRR44.76 to RRR44.83)	49.913390	-97.128130	Jurrows to Pritchard D	
hard (RRR44.83 to RRR44.90)	49.912665	-97.127810	Jurrows to Pritchard U	
(PRL58.70 to PRL59.34)	49.849139	-97.122920	Canna Club	

6. The next three columns are all optional, but for data to be added, it is recommended that the column titled “Site Description” be filled in, as this information will appear in the Google Earth balloons. For the purpose of this example, text will be entered into all three columns. The column “Snippet” is visible within Google Earth and can be used to provide a brief description. The column titled “ANY NOTES” will not appear in Google Earth and is for the user’s reference

8. After all cells that require input are complete, the risk level is obtained.

Factor		Risk Factor			
Option	Numeric Value	Consequence Factor	Risk	Risk Level	Response Level
Medium	0.4	1.06	52.9	Intermediate	Increased
	0.6	1.10	34.2	Low	Routine
	0.2	1.06	32.1	Low	Routine
	0.6	1.08	19.9	Low	Routine
Medium	0.4	1.04	32.9	Low	Routine
	0.2	1.02	64.4	Intermediate	Increased
Medium	0.4	1.04	24.8	Very Low	Minimum
High	0.8	1.16	75.8	Critical	Frequent
High	0.8	1.18	82.6	Critical	Frequent
	0.2	1.06	66.1	Intermediate	Increased

9. At the end of the data table, a few cells still require input from the user.

Response Level	CP	DK	DP	DR	EA	EB	EC	EH	EE
		Polygon							
Based									
Time									
Time									
Time									
Time									
Based									

SLIDESHOW	SITE	1987	1998	2004
FLASH LINK	IMAGES	Video	Video	Video
	LINK	Link	Link	Link

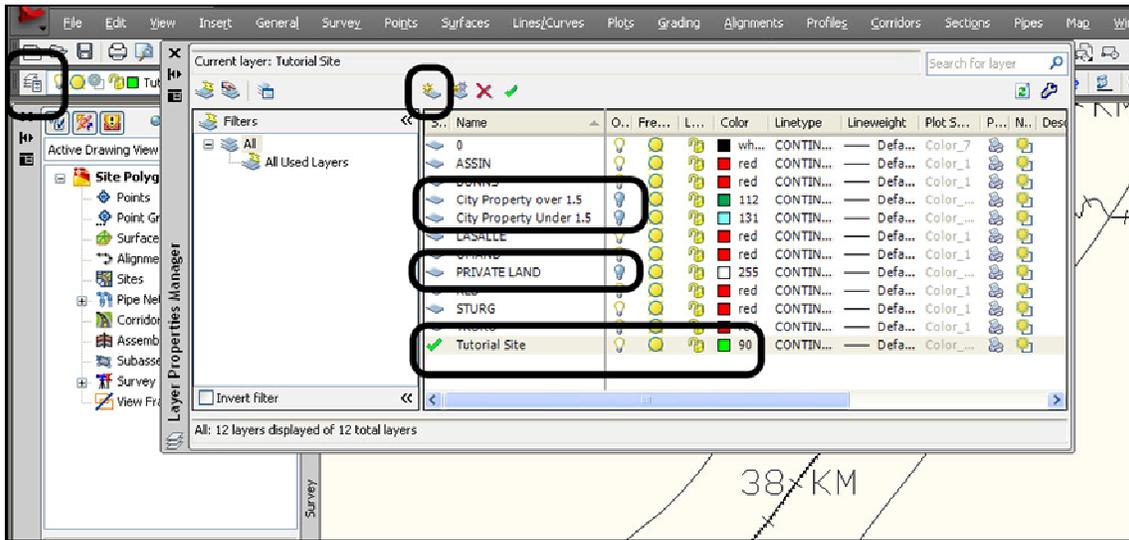
*Polygon: Coordinates for the shading seen in Google Earth. The shading is done in Autocad.

*Slideshow Flash Link: This is obtained from Google Picasa.

*Site Images Link: This link is created in Google Earth and uploaded to Google Page Creator.

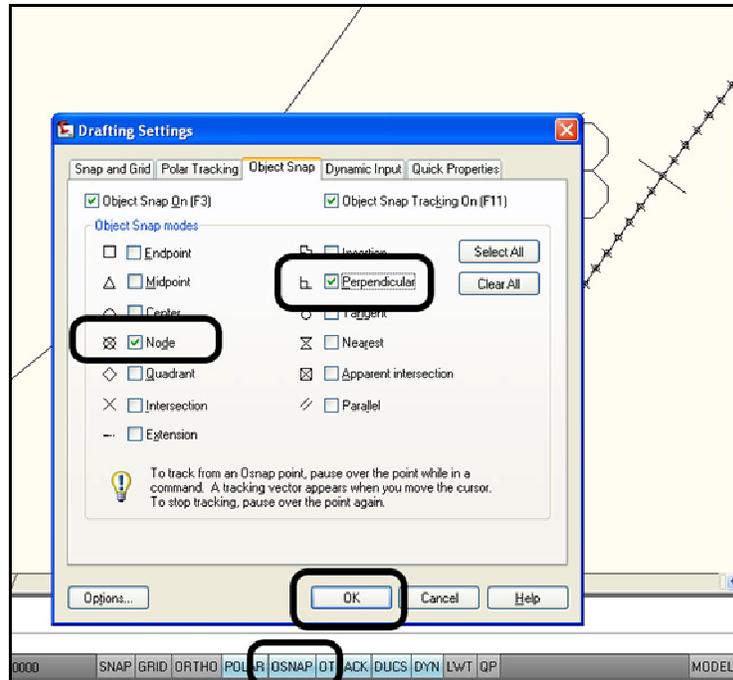
*Video Links: Video links are obtained from Google Video.

10. To fill in the final cells of the spreadsheet before observing our data in Google Earth it is necessary to begin with the Polygon cell. Load the “Site Polygon Template.dwg” file in Autocad Civil 3D or Autocad Maps (for this tutorial we will be using Civil 3D). To begin, click on the layer manager button and turn off all the layers shown in the example below and create a new layer called “Tutorial Site”.

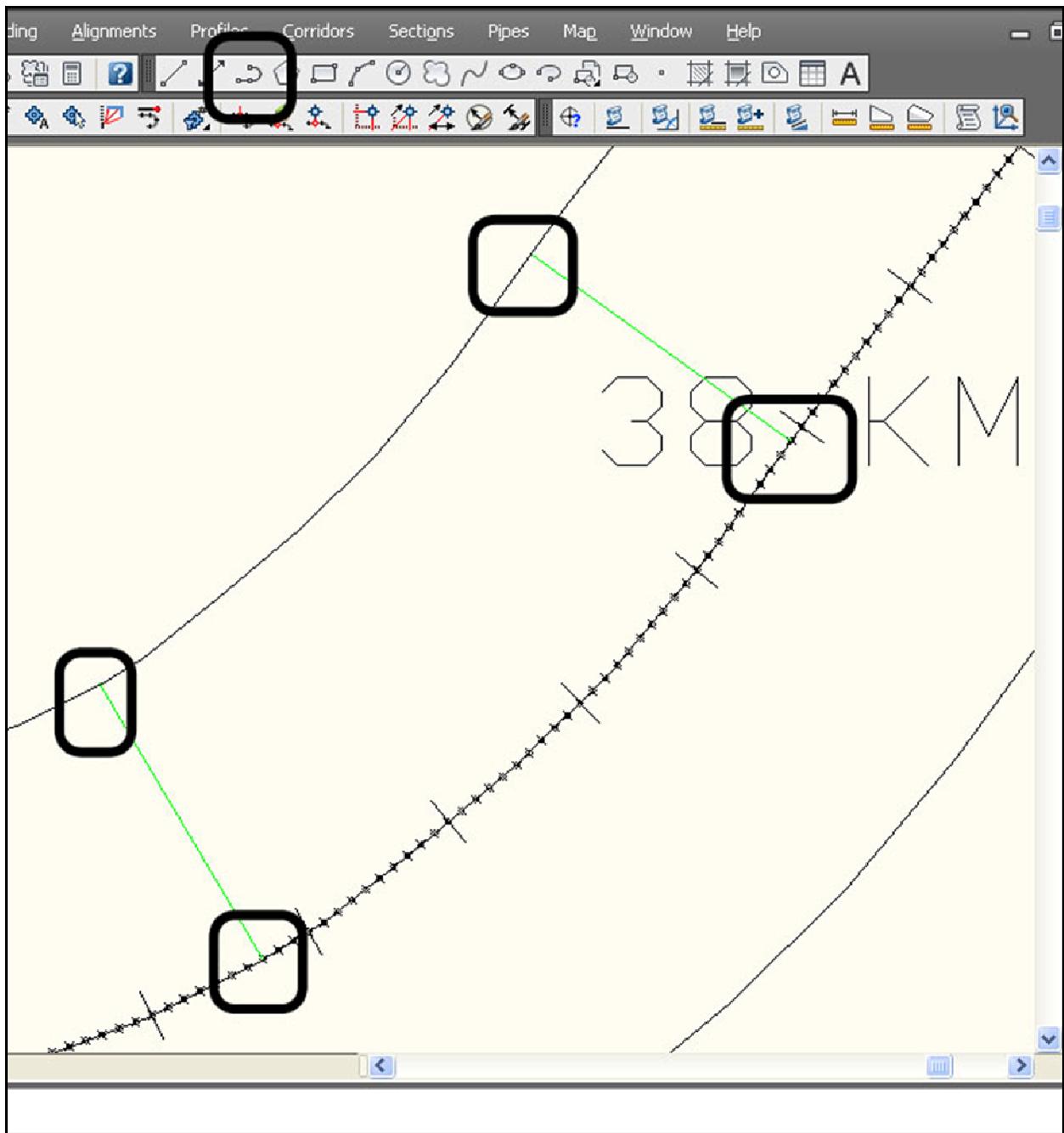


*Layer manager button is top left, create new layer is at the top of the manager window, click light bulbs to turn layers on and off, click color square to assign a color.

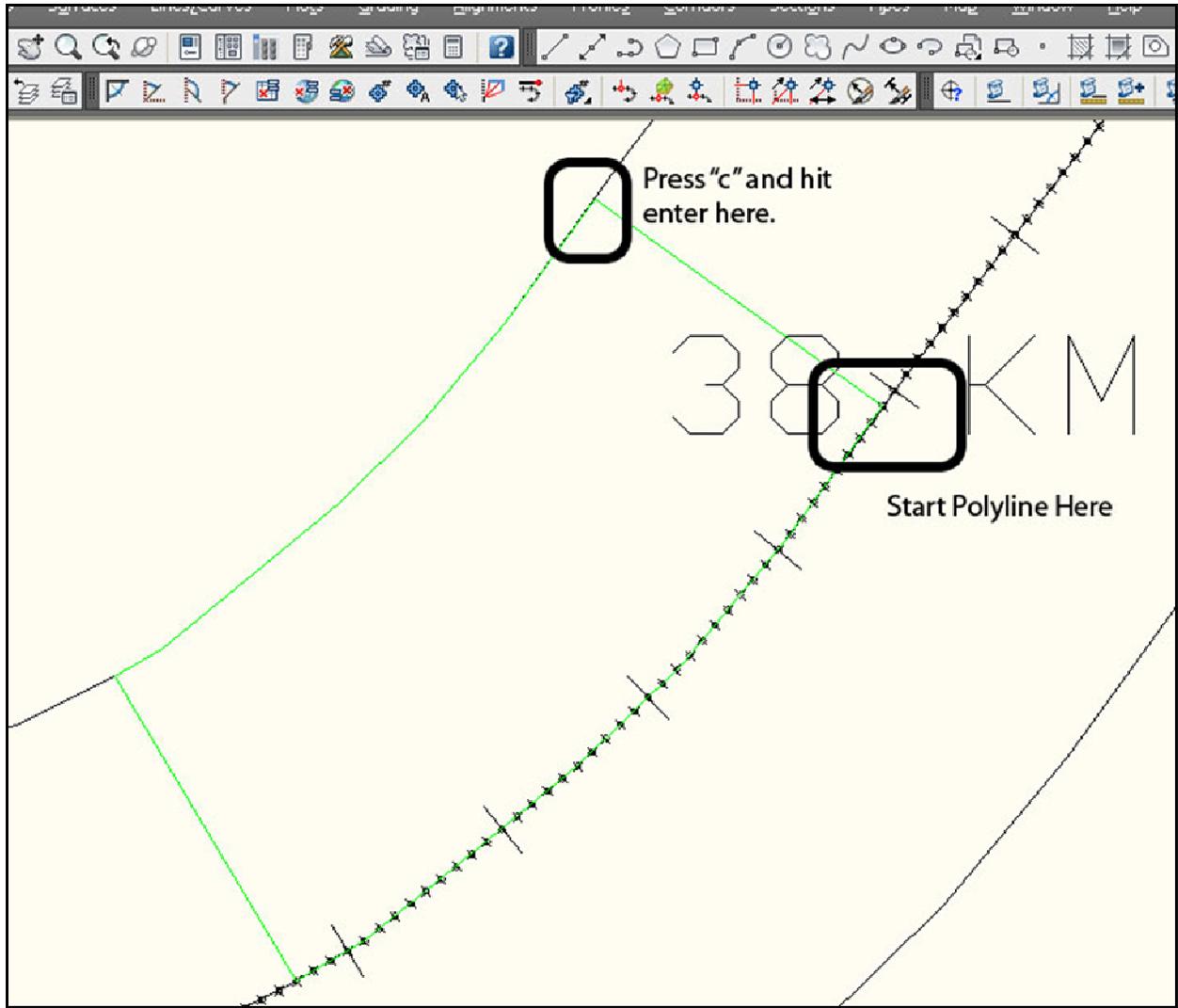
11. Before drawing polylines, OSNAPS (where the cursor will snap to) must be set. Right click on “ONSAF” at the bottom of the Autocad screen and select “settings”. In settings, only “node” and “perpendicular” should be checked off as seen in the example image. Click the boxes beside each type of snap as needed to make the appropriate settings; click OK.



12. The snaps are now set correctly, so it is necessary to proceed with drawing the desired region. Find the node that indicates the required river coordinate 38.01 (for this example). Each dot along the RCS is 10m and each line is 100m. Draw a line outwards perpendicular to the offset line indicating the boundary. Type "pline" and hit enter from within Autocad or select the polyline button as seen in sample image and click on the node, then on the perpendicular line, hitting enter after each perpendicular snap has been clicked.

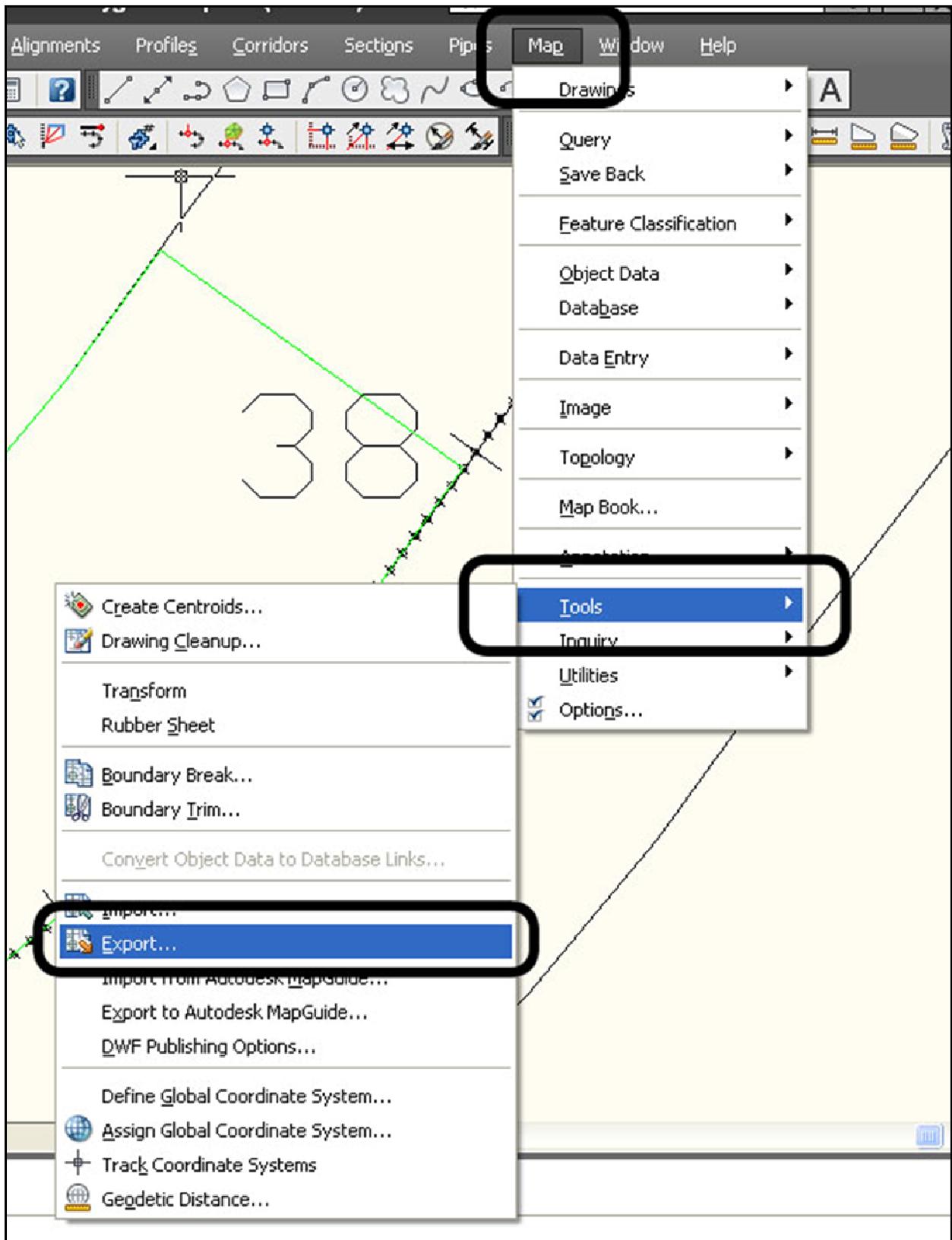


13. The tracing lines are complete. Follow the steps outlined earlier for setting OSNAP and make sure only "Endpoint" is checked off. Draw a closed polyline around the desired region to be used for shading. Hit "c" to close the polyline after clicking on the final endpoint as indicated in the example. Remember to always start your polyline along the RCS line.

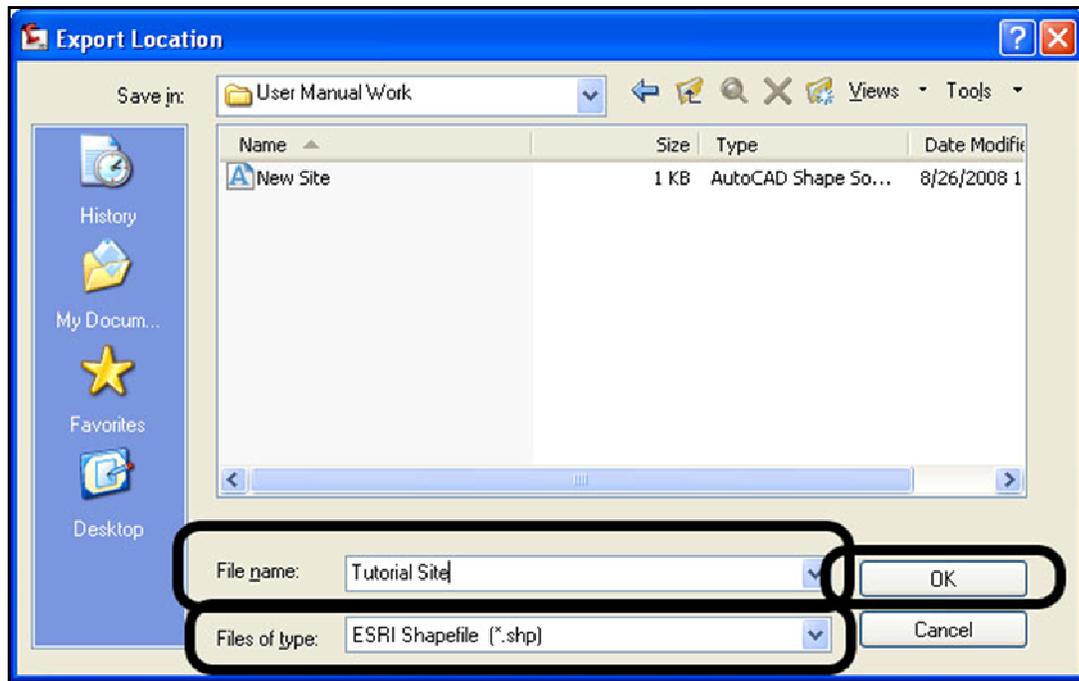


*A polyline is a continued or closed line. The user should click on all endpoint snaps until the final endpoint is reached. When the final endpoint is reached, press "c" and hit enter to close the polyline.

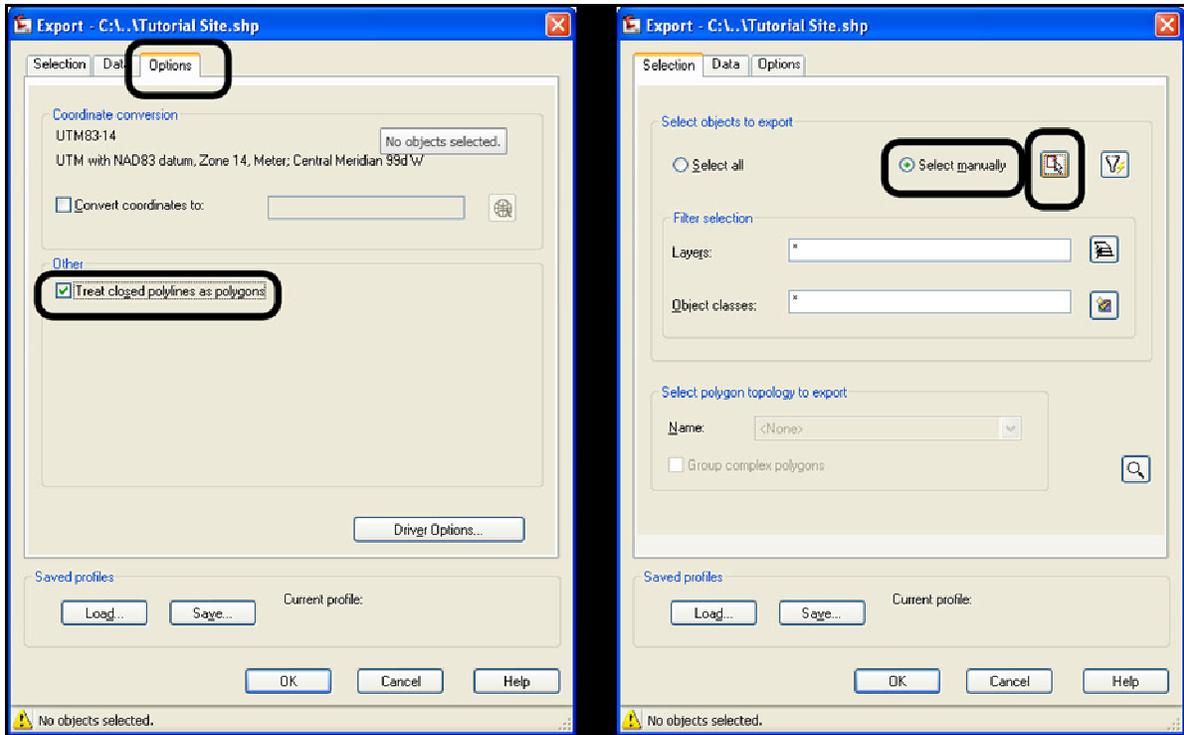
14. Because the polyline is drawn, the coordinates of the polygon can be exported to Google Earth. In Autocad Civil 3D or Maps, select "Map", then "Tools", then "Export".



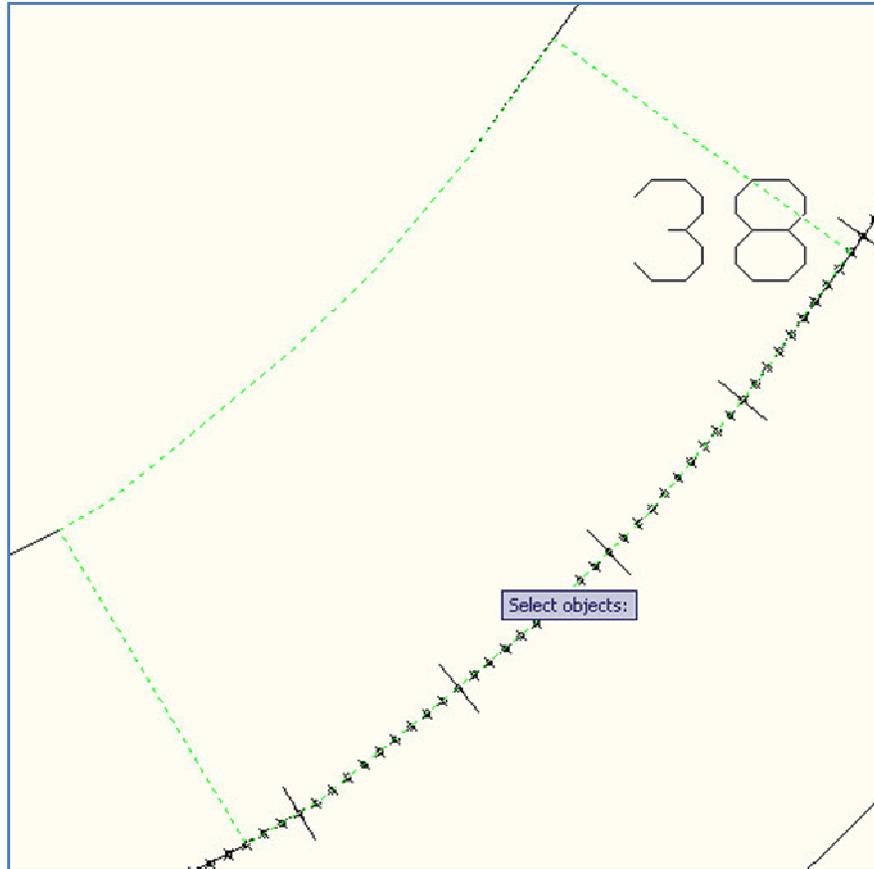
15. After clicking on “Export”, the user will be prompted with the following screen asking for a file name, location and type to be saved as. Make sure the file type is set to shape files and pick an appropriate file name and location.



16. After clicking “OK”, the user must ensure “treat closed polylines as polygons” is checked off under “Options”. Under “Selection”, pick “Select manually” and press the button immediately adjacent to this option as shown below.

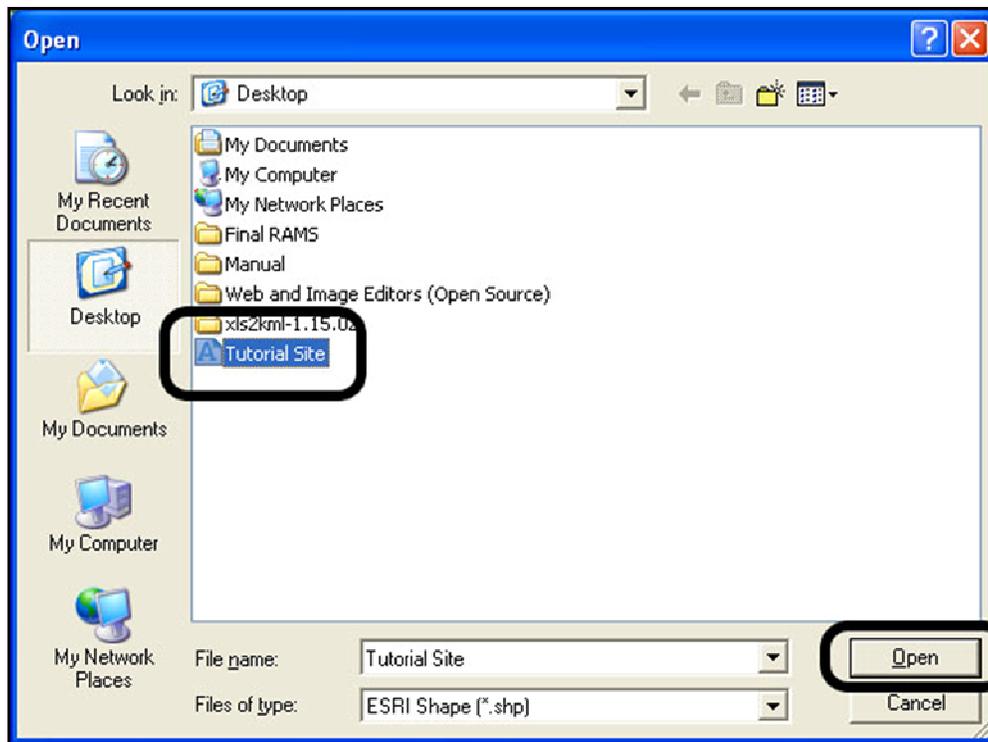


17. After pressing the button, the screen will return to Autocad paper space and the user must click on the polygon(s) that they want to be exported as .shp files. Click anywhere on the polyline that needs to be exported to select it. Press “enter” on the keyboard (the polyline will become dashed lines when selected).

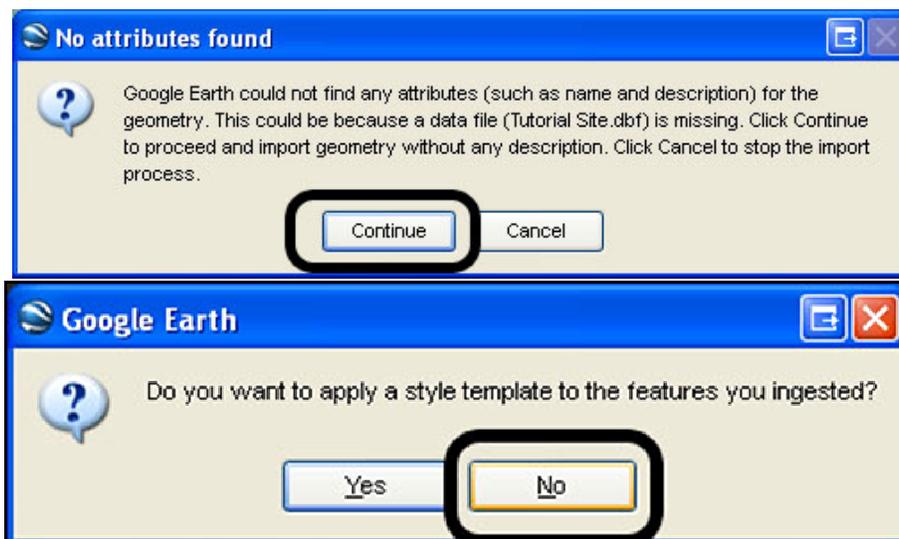


18. After “enter” has been pressed, the screen will return to the screen that was visible in Step 16. At this point, click “OK” and the SHP file will be generated and saved in the location indicated in Step 15.

19. Because the SHP file has been created, Google Earth can be launched to import the file. Once Google Earth Pro has been launched, click “File” in the top left corner, then click “Import” and the user will be prompted with the following screen. The user must browse and find the SHP file that was created in the previous steps.



20. The next two prompts notify the user that there are no attributes associated with the SHP file (which is okay) so click “continue”. The user should select “no” when prompted does a style template needs to be applied.



21. The next step for creating the shaded polygon is to right click on the feature in Google Earth and select “copy” (the feature is found by expanding all parent directories in the left-hand

toolbar). Then select “edit” and “paste” or hit “ctrl+v” in any text document such as notepad or Microsoft Word.



```

New Text Document - Notepad
File Edit Format View Help
<?xml version="1.0" encoding="UTF-8"?>
<kml xmlns="http://earth.google.com/kml/2.2">
<document>
  <name>kmlfile</name>
  <Schema parent="Placemark" name="s_Tutorial_site">
  </Schema>
  <style id="falsecolor">
    <Polystyle>
      <colorMode>random</colorMode>
    </Polystyle>
  </style>
  <s_Tutorial_site>
    <styleUrl>#falsecolor</styleUrl>
    <Polygon>
      <outerBoundaryIs>
        <LinearRing>
          <coordinates>
-97.08043094151633,49.95401073437995,0 -97.08242832327892,49.95499003386253,0 -97.08308071787276,49.95443611506006,0
-97.08368924470724,49.95398969568636,0 -97.08428928029902,49.95362987788417,0 -97.08495858918623,49.9532881853017,0
-97.08556490123189,49.95298842539208,0 -97.08590590910393,49.95286503367488,0 -97.08467617413274,49.95145428944488,0
-97.08418147726624,49.95163329069059,0 -97.08341734049378,49.95201107441873,0 -97.08265453028672,49.95240049445675,0
-97.08188893952674,49.95285957977882,0 -97.08113768473288,49.95341069039113,0 -97.08043094151633,49.95401073437995,0
          </coordinates>
        </LinearRing>
      </outerBoundaryIs>
    </Polygon>
  </s_Tutorial_site>
</document>
</kml>

```

22. As can be seen in the above image, notepad was used to paste the data from Google Earth. The text is the Google Earth language used to create features in Google Earth. From this set of data, only the numbers are needed with the <coordinates> tag (the highlighted values). Copy and paste these values into the RAMS excel spreadsheet remembering to place a single quotation mark (') in before the values into the Polygon cell. After this has been done, the polygon is complete and colors and shading are automatically assigned to it depending on the value in its Risk column.

Font	Alignment	Number	Styles
fx '-97.08043094151633,49.95401073437995,0 -97.08242832327892,49.95499003386253,0 -97.08308071787276,49.95443			
A	CP	DK	
		x	
		Polygon	
Site			
nt	Create kml	Priority Site List	Add a Site
		Rehide	SL FL
Failure Controlled			
Assiniboine River - Fort Rouge Park (ARL1.12 to ARL1.24)			-97.141205 <er
Assiniboine River - Granite Curling Club (ARR1.69 to ARR1.90)			-97.131700 <er
Red River - Tutorial Site (RRR38.01 to RRR38.43)			-97.08043094
Assiniboine River - Munson Park (ARL3.20 to ARL3.37)			-97.136677 <er

*Note: The ' in front of the coordinate values indicates to Excel that the co-ordinates are not a formula, but instead are entered data.

23. It is necessary to move on to the next cell in the spreadsheet titled "Slideshow Flash Link". The slideshow flash link is acquired from the Google service Picasa. To access the flash link, it is necessary to log in to the account and upload pictures. To begin, open a web browser and go to www.google.com. In the top right corner, there is a link titled "sign in"; click this. At this point, the user will be prompted for a username and password. The username is "cowrams" and a password will have already been given to the user. Click "sign in" and the user will be brought back to the google.com webpage. The username will be displayed in the top right corner. Beside the username, is a link titled "My Account"; click this and a list of services will be displayed. Picasa is one of the services displayed.



Sign in with your
Google Account

Email:

Password:

Remember me on this computer.

[I cannot access my account](#)

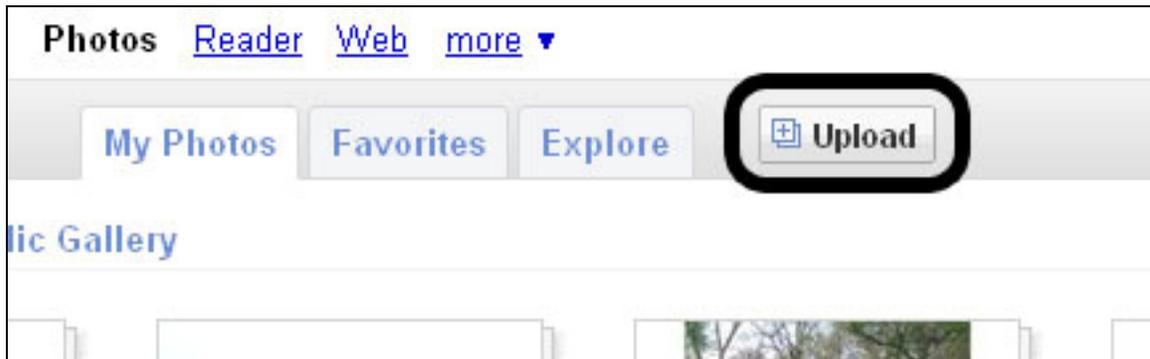
Don't have a Google Account?
[Create an account now](#)



My products - [Edit](#)

- [Docs](#)
- [Gmail](#) - [Settings](#)
- [iGoogle](#) - [Settings](#) [Add content](#)
- [Page Creator](#) - [Settings](#)
- [Picasa Web Albums](#) - [Settings](#)
- [Talk](#)
- [Video](#) - [Uploaded Videos](#)

24. Once in Picasa Web Albums, it is necessary to create a new album and fill with pictures. The code can be copied from the flash slideshow that is generated within Picasa, into Excel. First click the “upload” button found at the top of the screen in Picasa. A new window will pop up and new pictures can be added to a new album. It is also possible to create a new album when the window pops up by clicking on the link to create a new album.



25. Once the “create a new album” link has been clicked, another window will appear asking the user to input certain data. Remember to always list the album as private and locations can be added if desired.

Upload Photos: Create or Select Album

Enter details for a new album below or [choose an existing album](#).

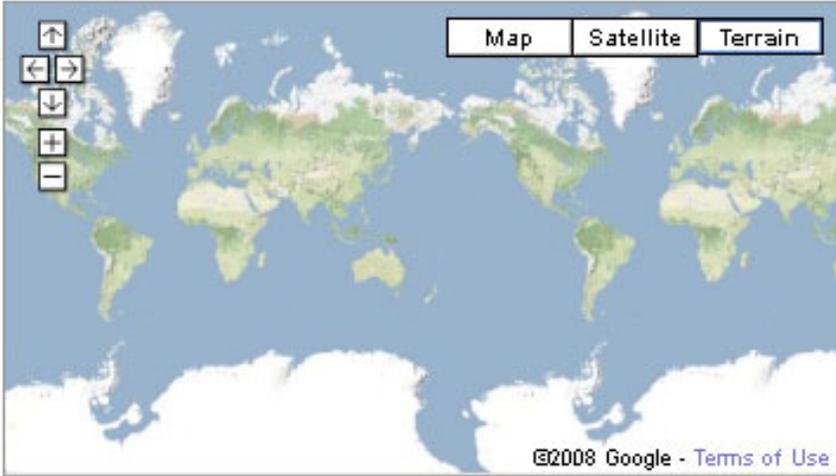
Title

Date

Description (optional)

Place Taken (optional) Show location on map

[Update map](#)
Please enter a location in the 'Place Taken' field.



Public (default) – For albums you want to show publicly.
This album will be visible to all users at <http://picasaweb.google.com/cowrams>. It will be included in Picasa Web Albums community search, based on preferences (Community search

Unlisted – For albums that you only want to share with select people

26. With the album created, the user will be taken to a screen asking them to add pictures that need to be uploaded. In this tutorial, images will be uploaded. Only 5 images can be added a time. Once the user has located the 5 images that they want added to the site, click the “start upload” button.

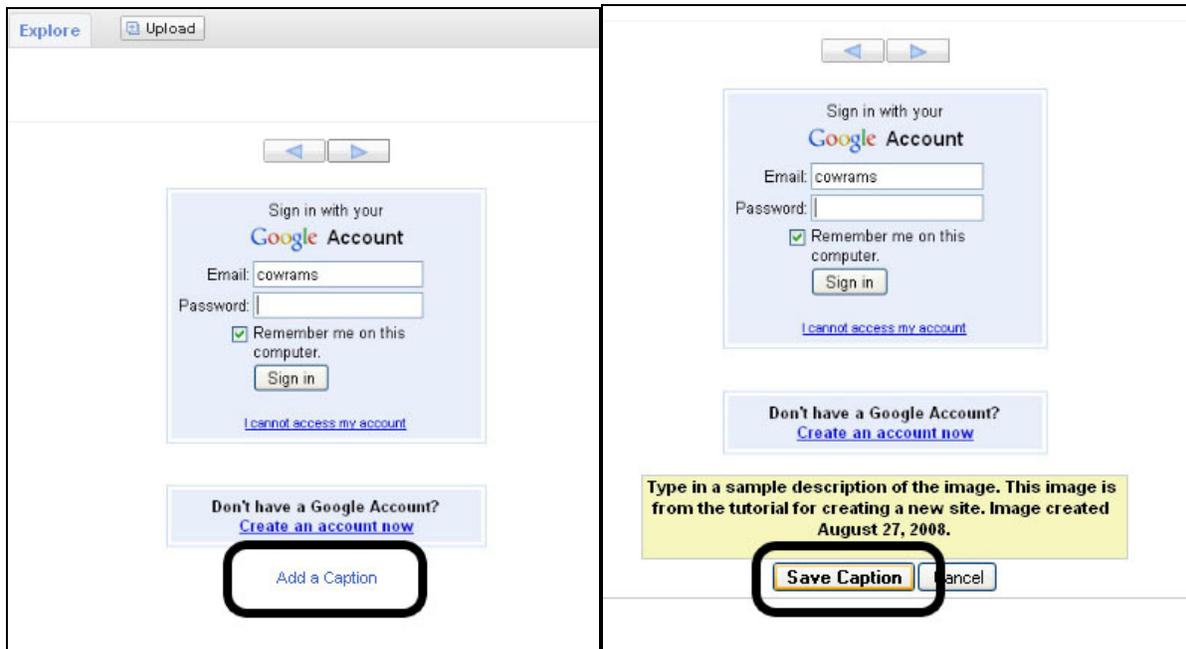


27. To add more images to a site, click the “upload” button again and follow the same procedure outlined in the previous step.



28. As with all the previous sites created, it is important to add captions to the images to describe what was observed and the date the photograph was taken. To add a caption, click the

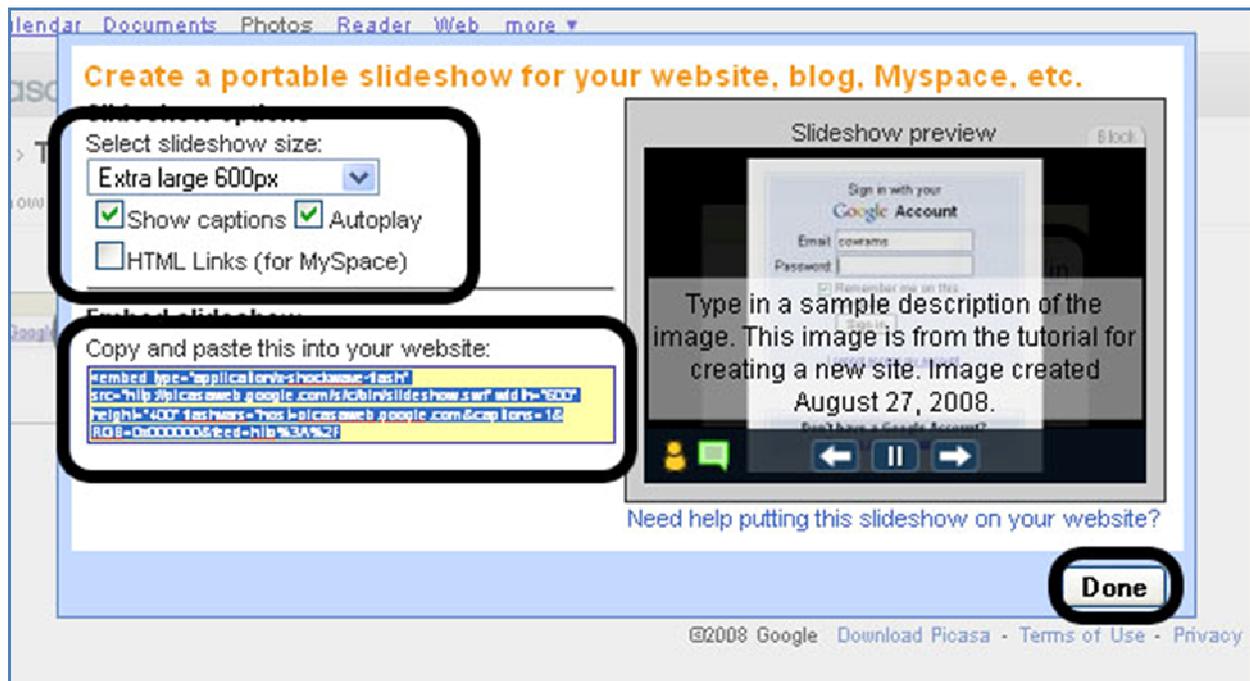
“add caption” button located directly beneath each image after the user has clicked on an image. The left and right arrow buttons can be used to cycle through the images. Make sure to save each caption.



29. Once the captions have been added, click the “view album” button found near the top left corner of the screen. Once in the main album page, click the “link to this album” button found on the right hand side of the screen, followed by “embed slideshow.”



30. Having clicked the “Embed Slideshow” button, a new window will appear requiring the user to adjust some settings. Make sure the slideshow size is set to extra large and the show captions and autoplay is checked off. Then click inside the yellow box and either right-click and select “copy” or hit “ctrl+c” on the keyboard.



31. After the slideshow code is copied, it can be pasted into the Excel spreadsheet in the appropriate cell. Either right-click in the cell and select paste, or enter the cell and hit “ctrl+v” on the keyboard.

<code><embed type="application/x-shockwave-flash" src="http://picasaweb.google.com/s/c/bin/slideshow.swf" width="400" height="260" /></code>				
	DK	DP	DR	EA
	x			
	Polygon			
Site				
kml	Priority Site List	Add a Site	Rehide	
Failure Controlled				
the River - Fort Rouge Park (ARL1.12 to ARL1.24)	-97.141205	<code><embed type="</code>	http://cowrams.goc	
the River - Granite Curling Club (ARR1.69 to ARR1.90)	-97.15178	<code><embed type="</code>	http://cowr;http://vic	
the River - Tutorial Site (RRR38.01 to RRR38.43)	-97.0804	<code><embed type="</code>	application/x-shock	
the River - Murren Park (ARL2.20 to ARL2.27)	-97.1599			

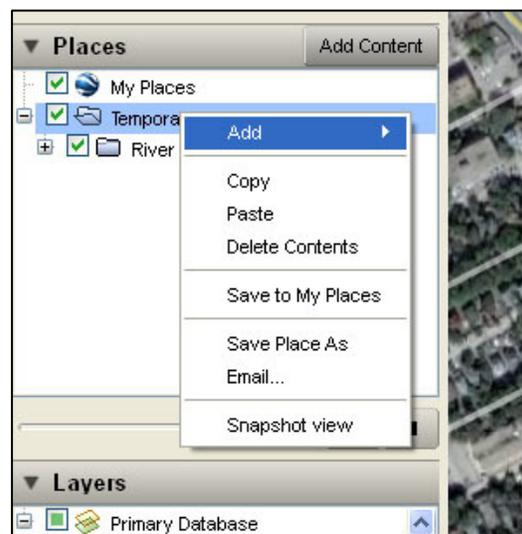
*The slideshow is now a part of the excel spreadsheet and will be integrated in the Google Earth file.

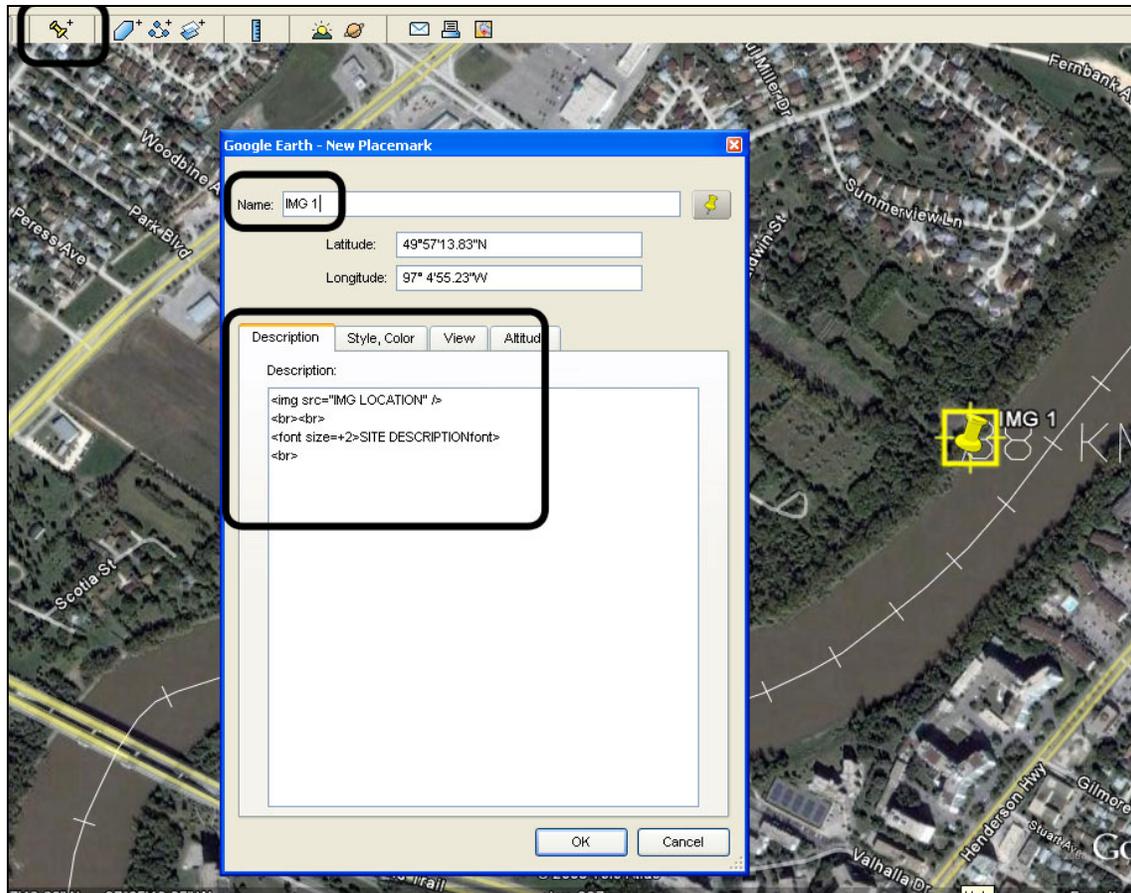
32. The slideshow is now complete. However, the Picasa account still needs to be used. The Google Earth file must be created that contains all the image locations. After opening Google Earth, go to the appropriate location of where the site is. Right-click on the folder "Temporary Places", select "Add", and then "New Folder". Name this new folder appropriately. Click the yellow pushpin icon at the top of the screen and move it to the approximate location of where an image was taken. Paste in the following code into the "description" box.

```

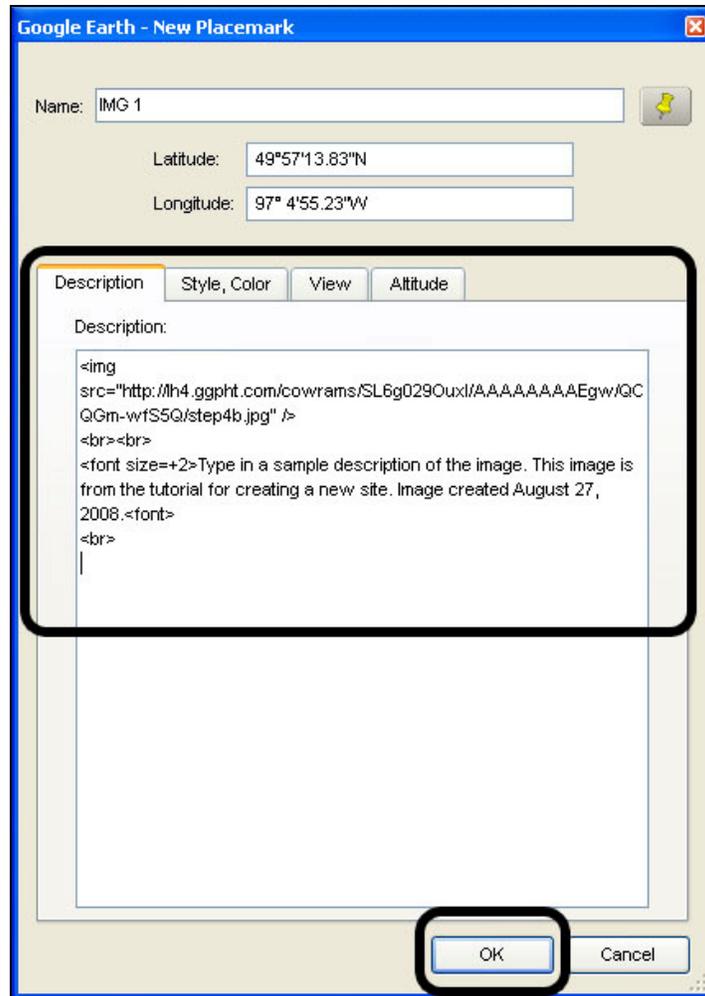

<br><br>
<font size=+2> DESCRIPTION</font>
<br>

```

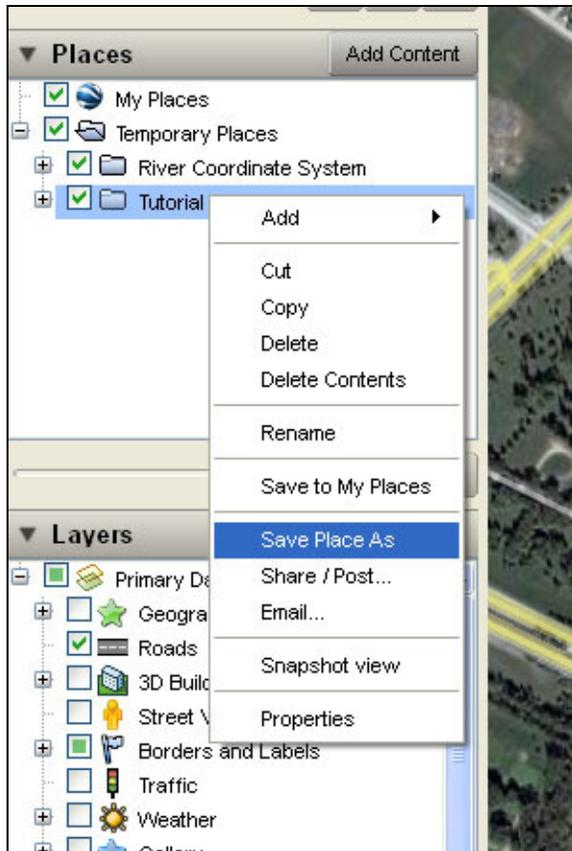




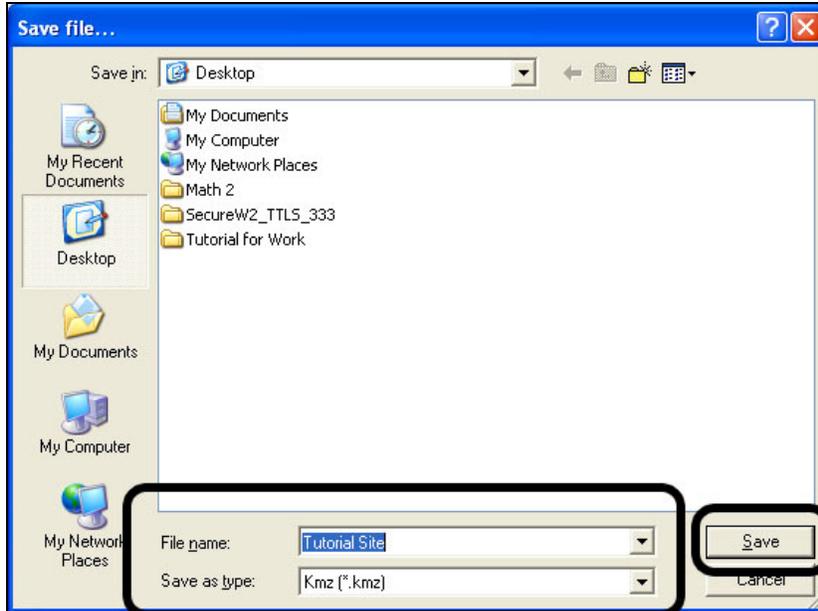
33. The IMAGE LOCATION text must be replaced with the link to the photo and DESCRIPTION. The description should match the text that was input in the caption box of Picasa. To obtain the image location, go back to the web album of the specific site, click on an image to enlarge it and then right-click on the image and select "properties". The html code will appear. Copy the html link to the image and then paste it into the field in the description box. The text from the caption can be copied and pasted or typed in. Repeat this step for all images in the web album.



34. Once all the images are entered, ensure the parent directory of the site is minimized (a plus sign should appear beside the folder) and save the site. To save the site, right-click on the parent directory and select "save place as". Save it as the default name that appears in the pop up.



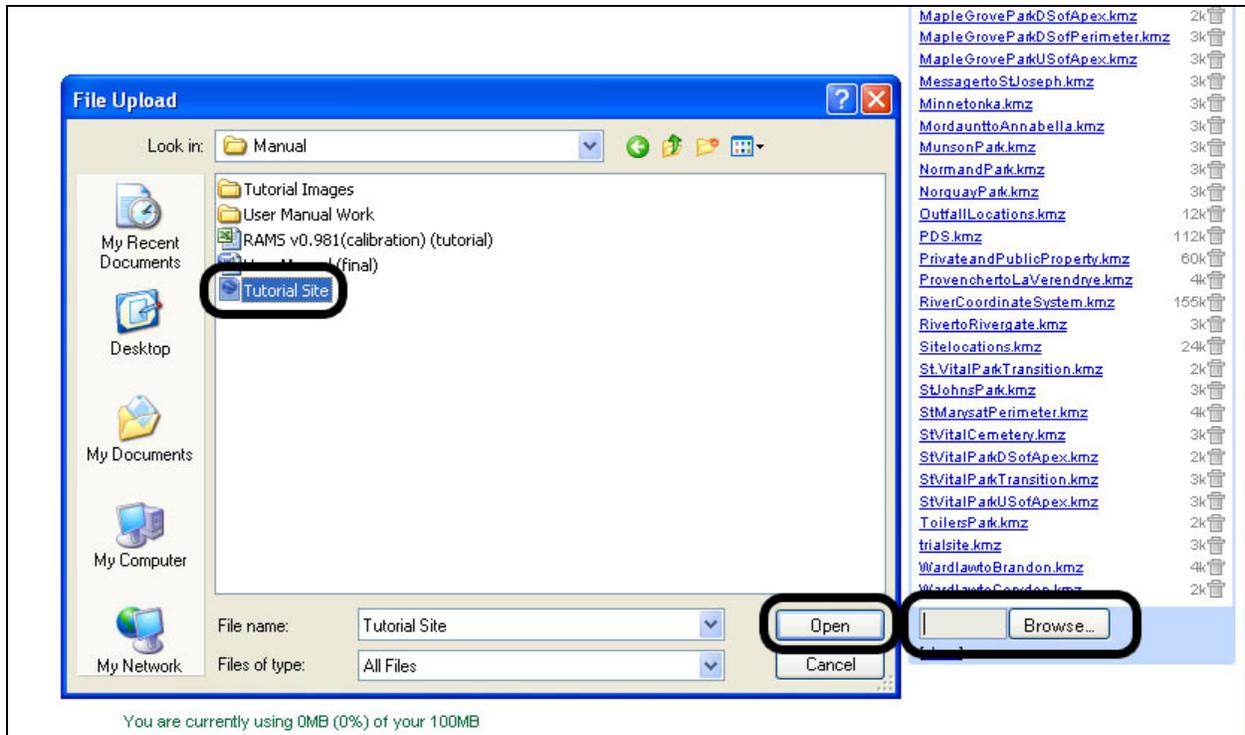
window.



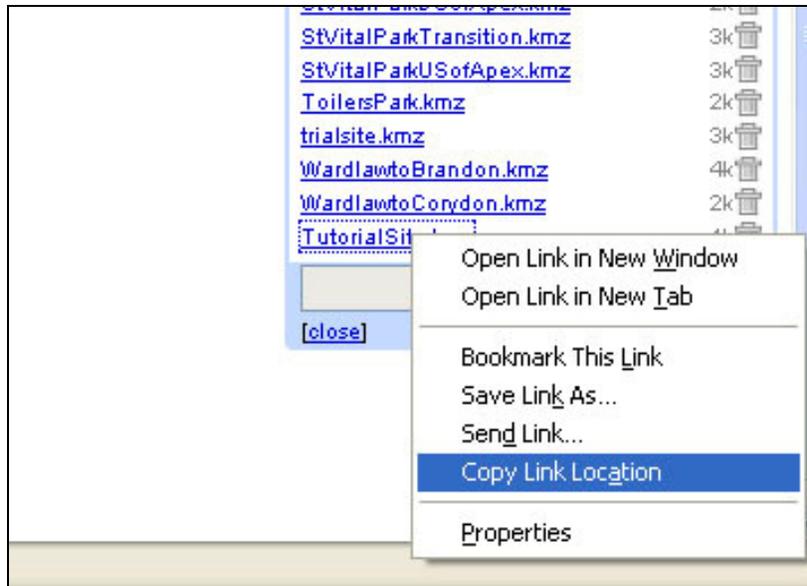
35. With the site saved, it can be uploaded to Google Page Creator in the gmail account. From the list of services, select “Page Creator”. In the new page displayed, there will be a list of files on the right-hand side. At the bottom of the list, there is an “upload” button; click this button.

EndofGraceSt.kmz	2k
FortRouge.kmz	3k
GrandmontatPembina.kmz	2k
GraniteCurlingClubDS.kmz	2k
GuayPark.kmz	3k
JessietoMulvey.kmz	2k
KingsParkErosion.kmz	2k
KingsParkFailure.kmz	4k
LyndalePark.kmz	4k
MapleGroveParkDSofApex.kmz	2k
MapleGroveParkDSofPerimeter.kmz	3k
MapleGroveParkUSofApex.kmz	3k
MessagertoStJoseph.kmz	3k
Minnetonka.kmz	3k
MordauntoAnnabella.kmz	3k
MunsonPark.kmz	3k
NormandPark.kmz	3k
NorquayPark.kmz	3k
OutfallLocations.kmz	12k
PDS.kmz	112k
PrivateandPublicProperty.kmz	60k
ProvenchertoLaVerendrye.kmz	4k
RiverCoordinateSystem.kmz	155k
RivertoRivergate.kmz	3k
Sitelocations.kmz	24k
St.VitalParkTransition.kmz	2k
StJohnsPark.kmz	3k
StMansatPerimeter.kmz	4k
StVitalCemetery.kmz	3k
StVitalParkDSofApex.kmz	2k
StVitalParkTransition.kmz	3k
StVitalParkUSofApex.kmz	3k
ToilersPark.kmz	2k
trialsite.kmz	3k
WardlawtoBrandon.kmz	4k
WardlawtoSoydon.kmz	2k
[upload]	

36. After clicking the “upload” button, click on the “Browse...” and locate the file that was created with the image locations. In this example, the file is called “Tutorial Site”. Select this file and click “open”. Now the file is stored in Page Creator, and it can be linked to.

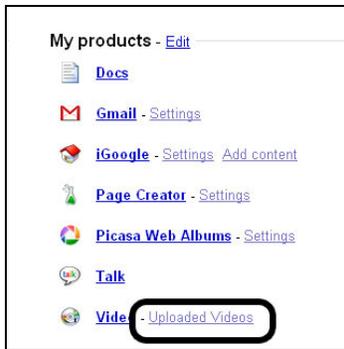


37. The last step with the images is to link the file stored in Page Creator to the RAMS spreadsheet. Right-click on the uploaded file and select “properties”. Paste the code into the appropriate cell in the Excel spreadsheet.

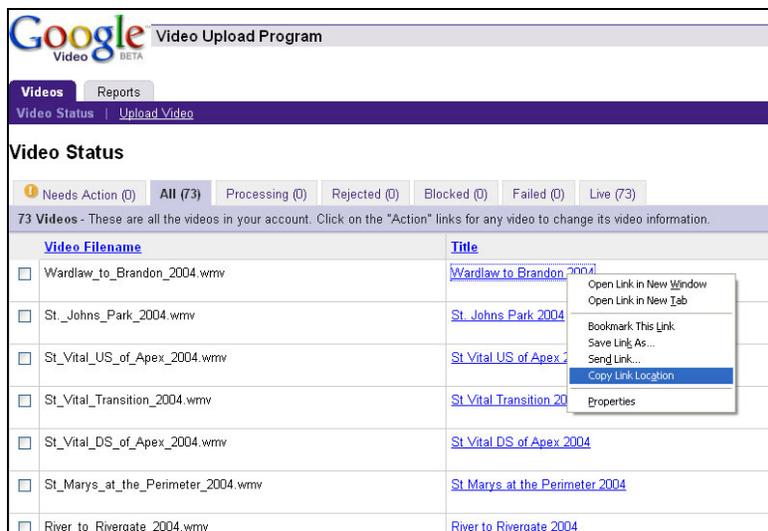


Font						Alignment		Number		Formatting as Table Styles		Cells		Clear		
fx http://cowrams.googlepages.com/TutorialSite.kmz						A		DK	DP	DR	EA	EB				
						x										
						Polygon										
Site																
<input type="button" value="Create kml"/> <input type="button" value="Priority Site List"/> <input type="button" value="Add a Site"/> <input type="button" value="Rehide"/>												SLIDESHOW FLASH LINK		SITE IMAGES LINK		
Failure Controlled														1987 Video Link		
Missiniboine River - Fort Rouge Park (ARL1.12 to ARL1.24)														1998 Video Link		
Missiniboine River - Granite Curling Club (ARR1.69 to ARR1.90)																
Red River - Tutorial Site (RRR38.01 to RRR38.43)																
Missiniboine River - Munson Park (ARL3.20 to ARL3.37)																
Red River - Annabella to May (RRR47.82 to RRR48.12)																

38. The last step before re-hiding all necessary cells is to paste any links from video files stored on Google Video. If the user is not still logged in to the Google account, follow the previously outlined steps to log in. Once logged in and viewing all services available from Google, click the link beside "Video" titled "Uploaded Videos".



39. Having clicked “Uploaded Videos”, the user will be presented with a screen listing all videos associated with the account. For this example, we will use the video of Wardlaw to Brandon video recorded in 2004. Right-click on the title “Wardlaw to Brandon 2004” and select “properties”. Paste the code into the appropriate cell in the spreadsheet.



		EB	EC	EH
Site				
tant	Create kml	Priority Site List	Add a Site	Rehide
		1998 Video Link	2004 Video Link	
Failure Controlled				
Assiniboine River - Fort Rouge Park (ARL1.12 to ARL1.24)		http://video	http://video	
Assiniboine River - Granite Curling Club (ARR1.69 to ARR1.90)		http://vid	http://video	
Red River - Tutorial Site (RRR38.01 to RRR38.43)		pages.c	http://video.google.c	
Assiniboine River - Munson Park (ARL3.20 to ARL3.37)		pages.com	munsonp	
Red River - Annabella to May (RRR47.82 to RRR48.12)		http://video	http://video	

*Repeat this step for all necessary videos

** To add a new video site, click the “upload video” button in Google Video and follow the next step.

40. To add a new video to Google Video, click the “upload video” button. Use the web-based ‘uploader’ by clicking the “Upload your video” button and then filling out all necessary information. Browse for the appropriate video file using the page that automatically loads up. Ensure the video is unlisted and the selected genre is “Educational”, as shown in the example image.

Videos | Reports

Video Status | Upload Video

Upload Video

There are two ways to upload video to Google:

- 1. Web-Based Uploader**
 - Use for files smaller than 100 MB
 - Upload using a web-based form
 - Instantly view your video online
- 2. Desktop Uploader**
 - Use for files larger than 100 MB
 - Upload using the Google Video Uploader
 - Upload multiple files at once[Learn more >](#)

All fields are required.

Video file:
We accept AVI, MPEG, Quicktime, Real, and Windows Media. [Learn more.](#)
 If your video file is over 100 MB, please use the [desktop uploader.](#)

Title:

Description:
Include details such as location and story summary

Genre:

Language:

Access: Public (your video will be included in search results).
 Unlisted ^{New!} - your video will **not** be included in search results. [Learn more](#)

Do not upload any TV shows, music videos, music concerts, or commercials without permission unless they consist of content you created yourself.

By clicking "Upload Video," you are representing that this video does not violate Google Video's [Terms of Use](#) and that you own the video or have authorization to upload it.

I agree to the [Upload Terms and Conditions.](#)

*Follow the previous step for adding this video to the excel spreadsheet.

41. Since the excel sheet has been completely filled out, click the "re-hide" button to return the excel spreadsheet to its more compact version.

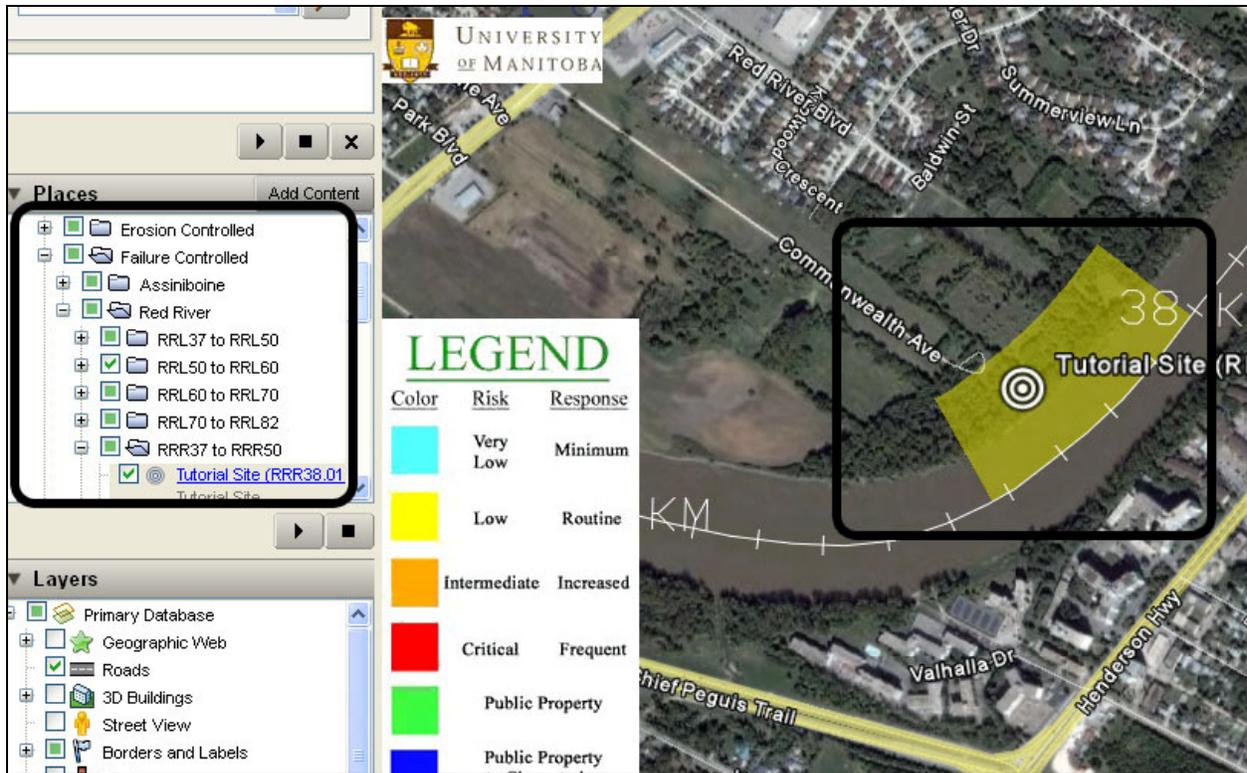
A		L	M
File Path and Name:		Kml Name:	
c:\COWRAMS		River Asset Manager	
Use:*			
Columns:			
Site			
<input type="button" value="Important"/> <input type="button" value="Create kml"/> <input type="button" value="Priority Site List"/> <input type="button" value="Add a Site"/> <input type="button" value="Rehide"/>		Azimuth	Value
Failure Controlled			
Assiniboine River - Fort Rouge Park (ARL1.12 to ARL1.24)		N	0.02
Assiniboine River - Granite Curling Club (ARR1.69 to ARR1.90)		S	0.10
Red River - Tutorial Site (RRR38.01 to RRR38.43)		SE	0.05
Assiniboine River - Munson Park (ARL3.20 to ARL3.37)		NE	0.02
Red River - Annabella to May (RRR47.82 to RRR48.12)		S	0.10

42. To generate a new priority list, click the “Priority Site List” button. Following this, a Microsoft Word document will open with a list of the Top 12 sites.

Top 12 Priority Site List

#	Site Location and Name	Risk Factor	Risk Level	Response Level
1	Churchill Park Drive (Montague to Cockburn) (RRR56.00 to RRR56.50)	82.6	Critical	Frequent
2	King's Park (RRR71.68 to RRR72.08)	81.4	Critical	Frequent
3	End of Grace St. (RRR47.24 to RRR47.29)	81.1	Critical	Frequent
4	Lyndale Drive (RRL51.33 to RRL52.30)	79.9	Critical	Frequent
5	Guay Park (RRL53.50 to RRL53.64)	77.0	Critical	Frequent
6	Minnetonka (RRL67.00 to RRL67.07)	76.6	Critical	Frequent
7	Canoe Club (RRL58.79 to RRL59.34)	75.8	Critical	Frequent
8	Churchill Park Drive (Osborne to Montague) (RRR55.64 to RRR56.01)	75.1	Critical	Frequent
9	Maple Grove - U/S of Apex (RRL72.15 to RRL72.50)	74.4	Intermediate	Increased
10	Crescent Park (RRR62.35 to RRR62.86)	74.4	Intermediate	Increased
11	River to Rivergate (RRL67.27 to RRL67.53)	73.7	Intermediate	Increased
12	Messenger to St. Joseph (RRL48.15 to RRL48.53)	73.6	Intermediate	Increased

43. To visualize the data in Google Earth, click the “Create kml” button. Press “Yes” to open the file in Google Earth or answer “No” to simply generate the file. To look at the generated Google Earth file, the user will need to locate the site within the directory on the left-hand side (as the newly created site is not in the top 12 priority site list).



*Click on the bulls-eye associated with the Tutorial Site to view the GE balloon shown below.