

	SARTopo Exercise	Index
	Job Aids	Pg. 1 of 1

This document contains job aids that were developed for a search exercise hosted by Mountaineer Area Rescue Group and the Appalachian Search and Rescue Conference November 16-18, 2018. The steps include information specific to that exercise. Errors are known to exist.

This work is licensed under the Creative Commons Attribution-ShareAlike 4.0 International License. To view a copy of this license, visit <http://creativecommons.org/licenses/by-nc-sa/4.0/> or send a letter to Creative Commons, PO Box 1866, Mountain View, CA 94042, USA.



SARTopo Exercise

Index

Job Aid Index

Pg. 1 of 1

Job Aid	Title	Station
1	Initiate Incident and Print Maps	Ops Support
2	Print Maps	Ops Support
3	Create linear reflex assignments	Plans
4A 4B	Print TAFs Initial TaskPrep Run	Ops Support
5	Prepare GPS Unit for Tasking	Ops Support
6	Brief a Task	Briefing
7	Mark task in progress	Ops Support, Comms
8	Record a Clue	Ops Support, Comms
9	Debrief a task	Debriefing
10	Complete a task in SARTopo	Ops Support
11	Field Control	White cell
12A 12B 12C	Virtual Linear Field Task Virtual Area Field Task Virtual Area Field Task, Drawing the Line	Virtual Field
13	Create Regions and Segments	Plans
14	Create area assignments	Plans
15	Review of Completed Tasks	Plans
16 16A	Request Remote Support RS-OSL One Pager	Plans
17	Staging	Staging
18	Setup Projector	Ops Support
20	Printing	All base

Assignment Job Flow

Plans

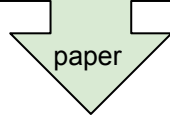
Job Aids 03, 14
Creates in
"PT2 - To Be Printed"



Job Aid 15
Reviews Completed
tasks

Operations

Job Aids 02, 04, 05
Prepares task packages
"PT4 To Be Assigned"

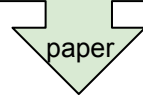


Job Aids 07, 08
May record clues,
mark in progress
Set oper. period

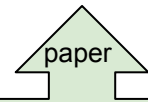
Job Aid 10
Marks complete
Sets oper. period



Job Aid 06
Briefs field team

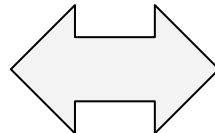


Job Aid 09
Debriefs field team

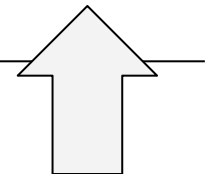



Comms

Job Aids 07, 08
May record clues,
mark in progress
Set oper. period




Field




	SARTopo Exercise	Job Aid #01
	Initiate Incident and Print Maps	


Steps	SOG#3
Click on “Initiate Incident” on Desktop (MARG Laptop) <ul style="list-style-type: none"> ● Use default Incident ID (2018-11-16_A) 	3.1
Import MARG Standard Folders and Operational Periods <ul style="list-style-type: none"> ● “Import”, “Choose Files”, c:\IncidentData\Incident_Template\“MARG_folder_and_operational_periods.json” ● “Open”, “Import” 	3.4
Create Markers for IPP, LKP, IC that are known <ul style="list-style-type: none"> ● “Add”, “Add Marker” ● Enter name in label (eg LKP), coordinates, select “Incident” folder 	3.5
Save the Incident Map as 2018-11-16_A <ul style="list-style-type: none"> ● Select “Mountaineer Area Rescue Group” to save the map to team account 	3.6
Create Range Rings <ul style="list-style-type: none"> ● Look up horizontal distance for category and terrain in LPB ● Right-click on IPP, “New”, “Range Rings” ● Enter metric distances from LPB, choose “meters”, “Create” ● Move the range rings into the “Range Rings” folder using Bulk Ops. (If unsure how to do this, have someone do this after you’ve printed the maps) 	3.7
Print Incident Maps Config: <ul style="list-style-type: none"> ● Show Labels: All, Set Visibility: By Folder ● Datum: WGS84, Coordinate System, primary: USNG Turn on “WV Rec Trails” Overlay Print the map <ul style="list-style-type: none"> ● Click “Print” on the top menu bar, then “Print to PDF or JPG”. ● Select a base layer. Recommended: USGS 7.5’ ● Set the scale (1:24000) and, check "USNG", “Auto” grid lines ● Set Orientation to “Landscape” or “Portrait” as desired ● Click “Generate PDF” ● Verify that “Actual Size” is checked. ● Change copies to desired number ● Click “Print” 	9.1, Job Aid 2

	SARTopo Exercise	Job Aid #01
	Initiate Incident and Print Maps	

Steps	SOG#3
Click on “Initiate Incident” on Desktop (MARG Laptop) <ul style="list-style-type: none"> ● Use default Incident ID (2018-11-16_A) 	3.1
Import MARG Standard Folders and Operational Periods <ul style="list-style-type: none"> ● “Import”, “Choose Files”, c:\IncidentData\Incident_Template\“MARG_folder_and_operational_periods.json” ● “Open”, “Import” 	3.4
Create Markers for IPP, LKP, IC that are known <ul style="list-style-type: none"> ● “Add”, “Add Marker” ● Enter name in label (eg LKP), coordinates, select “Incident” folder 	3.5
Save the Incident Map as 2018-11-16_A <ul style="list-style-type: none"> ● Select “Mountaineer Area Rescue Group” to save the map to team account 	3.6
Create Range Rings <ul style="list-style-type: none"> ● Look up horizontal distance for category and terrain in LPB ● Right-click on IPP, “New”, “Range Rings” ● Enter metric distances from LPB, choose “meters”, “Create” ● Move the range rings into the “Range Rings” folder using Bulk Ops. (If unsure how to do this, have someone do this after you’ve printed the maps) 	3.7
Print Incident Maps Config: <ul style="list-style-type: none"> ● Show Labels: All, Set Visibility: By Folder ● Datum: WGS84, Coordinate System, primary: USNG Turn on “WV Rec Trails” Overlay Print the map <ul style="list-style-type: none"> ● Click “Print” on the top menu bar, then “Print to PDF or JPG”. ● Select a base layer. Recommended: USGS 7.5’ ● Set the scale (1:24000) and, check "USNG", “Auto” grid lines ● Set Orientation to “Landscape” or “Portrait” as desired ● Click “Generate PDF” ● Verify that “Actual Size” is checked. ● Change copies to desired number ● Click “Print” 	9.1, Job Aid 2

	SARTopo Exercise	Job Aid #02
	Print Maps	Pg. 1 of 7

Map Type	Use	Scale	Background
Incident Map	Handwriting reflex task General maps	1:24000	USGS 7.5
Task Map	Given to field team for non-segment tasks (OPSnnn or PLNnnn tasks) Overview task map for ops	1:12000	USGS 7.5 and optionally "WV Aerial Photo"
Segment Task Map	Given to field team for segment tasks (eg A01-1)	1:12000	USGS 7.5 and optionally "WV Aerial Photo"
Segment Planning Map	Overview task map for ops Planning map	1:24000	USGS 7.5
Travel Map	Given to field team for navigating to task	1:24000	MapBuilder or OpenStreet Map
Clue Map	Overview of clues logged to SARTopo	1:24000	USGS 7.5

	SARTopo Exercise	Job Aid #02
	Print Maps	Pg. 2 of 7

Incident Map	SOG#3
<p>Config:</p> <ul style="list-style-type: none"> ● Show Labels: All ● Set Visibility: By Folder ● Datum: WGS84 ● Coordinate System, primary: USNG <p>Overlay</p> <ul style="list-style-type: none"> ● Turn on “WV Rec Trails” Overlay <p>Choose objects to print:</p> <ul style="list-style-type: none"> ● Show Folders: <ul style="list-style-type: none"> ○ Incident ○ Range Rings ● Hide Folders: <ul style="list-style-type: none"> ○ All others <p>Print the map</p> <ul style="list-style-type: none"> ● Click “Print” on the top menu bar, then “Print to PDF or JPG”. ● Select a base layer. Recommended: USGS 7.5’ ● Set the scale (1:24000) and, check "USNG", “Auto” grid lines ● Set Orientation to “Landscape” or “Portrait” as desired ● Click “Generate PDF” ● Verify that “Actual Size” is checked. ● Change copies to desired number ● Click “Print” 	9.1




SARTopo Exercise

Job Aid #02


Print Maps

Pg. 3 of 7


Task Map	SOG#3
<p>Config:</p> <ul style="list-style-type: none">● Show Labels: All● Set Visibility: By Folder● Datum: WGS84● Coordinate System, primary: USNG <p>Overlay</p> <ul style="list-style-type: none">● Turn on “WV Rec Trails” Overlay <p>Choose objects to print:</p> <ul style="list-style-type: none">● Show Folders:<ul style="list-style-type: none">○ Incident○ Range Rings○ Operational Periods:<ul style="list-style-type: none">■ Turn on PT2, PT3, PT4■ Turn off all others○ Assignments● Hide Folders:<ul style="list-style-type: none">○ All others <p>Print the map</p> <ul style="list-style-type: none">● Click “Print” on the top menu bar, then “Print to PDF or JPG”.● Select a base layer. Recommended: USGS 7.5’● Scale (1:12000)● Check "USNG", and select “100M” grid lines,● Set Orientation to “Landscape” or “Portrait” as desired● Click “Generate PDF”● Verify that “Actual Size” is checked.● Change copies to desired number● Click “Print” <p>May need to create multiple maps if all tasks do not fit on one map. Optionally repeat print with the “WV Aerial Photo Mixed Resolution” Layer selected</p>	9.1

	SARTopo Exercise	Job Aid #02
	Print Maps	Pg. 4 of 7


Segment Task Map	SOG#3
<p>Config:</p> <ul style="list-style-type: none"> ● Show Labels: All ● Set Visibility: By Folder ● Datum: WGS84 ● Coordinate System, primary: USNG <p>Overlay</p> <ul style="list-style-type: none"> ● Turn on “WV Rec Trails” Overlay <p>Choose objects to print:</p> <ul style="list-style-type: none"> ● Show Folders: <ul style="list-style-type: none"> ○ Incident ○ Range Rings ○ Segments ● Hide Folders: <ul style="list-style-type: none"> ○ All others <p>Print the map</p> <ul style="list-style-type: none"> ● Click “Print” on the top menu bar, then “Print to PDF or JPG”. ● Select a base layer. Recommended: USGS 7.5’ ● Scale (1:12000) ● Check "USNG", and select “100M” grid lines, ● Set Orientation to “Landscape” or “Portrait” as desired ● Click “Generate PDF” ● Verify that “Actual Size” is checked. ● Change copies to desired number ● Click “Print” <p>May need to create multiple maps if all segments do not fit on one map. Optionally repeat with the “WV Aerial Photo Mixed Resolution” Layer selected</p>	9.1

	SARTopo Exercise	Job Aid #02
	Print Maps	Pg. 5 of 7


Segment Planning Map	SOG#3
<p>Config:</p> <ul style="list-style-type: none"> ● Show Labels: All ● Set Visibility: By Folder ● Datum: WGS84 ● Coordinate System, primary: USNG <p>Overlay</p> <ul style="list-style-type: none"> ● Turn on “WV Rec Trails” Overlay <p>Choose objects to print:</p> <ul style="list-style-type: none"> ● Show Folders: <ul style="list-style-type: none"> ○ Incident ○ Range Rings ○ Segments ● Hide Folders: <ul style="list-style-type: none"> ○ All others <p>Print the map</p> <ul style="list-style-type: none"> ● Click “Print” on the top menu bar, then “Print to PDF or JPG”. ● Select a base layer. Recommended: USGS 7.5’ ● Scale (1:24000) ● Check "USNG", and select “Auto” grid lines, ● Set Orientation to “Landscape” or “Portrait” as desired ● Click “Generate PDF” ● Verify that “Actual Size” is checked. ● Change copies to desired number ● Click “Print” 	9.2

	SARTopo Exercise	Job Aid #02
	Print Maps	Pg. 6 of 7


Travel Map	SOG#3
<p>Config:</p> <ul style="list-style-type: none"> ● Show Labels: All ● Set Visibility: By Folder ● Datum: WGS84 ● Coordinate System, primary: USNG <p>Overlay</p> <ul style="list-style-type: none"> ● Turn on “WV Rec Trails” Overlay <p>Choose objects to print:</p> <ul style="list-style-type: none"> ● Show Folders: <ul style="list-style-type: none"> ○ Incident ○ Range Rings ● Hide Folders: <ul style="list-style-type: none"> ○ All others <p>Print the map</p> <ul style="list-style-type: none"> ● Click “Print” on the top menu bar, then “Print to PDF or JPG”. ● Select a base layer. Recommended: MapBuilder Topo or OpenStreet Map ● Set the scale (1:24000) and, check "USNG", “Auto” grid lines ● Set Orientation to “Landscape” or “Portrait” as desired ● Click “Generate PDF” ● Verify that “Actual Size” is checked. ● Change copies to desired number ● Click “Print” 	9.1

	SARTopo Exercise	Job Aid #02
	Print Maps	Pg. 7 of 7


Clue Map	SOG#3
<p>Config:</p> <ul style="list-style-type: none"> ● Show Labels: All ● Set Visibility: By Folder ● Datum: WGS84 ● Coordinate System, primary: USNG <p>Overlay</p> <ul style="list-style-type: none"> ● Turn on “WV Rec Trails” Overlay <p>Choose objects to print:</p> <ul style="list-style-type: none"> ● Show Folders: <ul style="list-style-type: none"> ○ Incident ○ Range Rings ○ Segments ○ Operational Periods ○ Clues ● Hide Folders: <ul style="list-style-type: none"> ○ Assignments ○ Tracks ○ All others <p>Print the map</p> <ul style="list-style-type: none"> ● Click “Print” on the top menu bar, then “Print to PDF or JPG”. ● Select a base layer. Recommended: USGS 7.5’ ● Scale (1:24000) ● Check "USNG", and select “Auto” grid lines, ● Set Orientation to “Landscape” or “Portrait” as desired ● Click “Generate PDF” ● Verify that “Actual Size” is checked. ● Change copies to desired number ● Click “Print” 	9.3

	SARTopo Exercise	Job Aid #03
	Create Linear Reflex Assignment	Pg. 1 of 1


Steps	SOG#3
<p>Early assignments:</p> <ul style="list-style-type: none"> ● Hand write TAF on carbonless forms. Assign “planning” or “assignment” number using OPSnnn format. ● Highlight the linear feature on two paper copies of maps (see Job Aid #01) and on the master map. Label maps using the OPSnnn number. ● Place TAF and two copies of maps in the “To Be Assigned” folder. ● As time permits, create assignments in SARTopo as in steps below 	---
<p>Add “Line Assignment” to SARTopo</p> <ul style="list-style-type: none"> ● Letter: OPSnnn or PLNnnn ● Operational Period: PT1 Planning ● Status: Draft ● Prepared By: your name (eg P Lindsay) <p>Draw Assignment</p> <p>Edit Assignment</p> <ul style="list-style-type: none"> ● Details - describe task for the field team ● Operational Period: PT2 Ready to Print ● Status: Prepared 	4.1, 4.2

	SARTopo Exercise	Job Aid #04A
	Print TAFs	Pg. 1 of 1


Steps	SOG#3
<p>In SARTopo, move assignments in “PT2 – To Be Printed” to “PT3 – Printing” Click “Bulk Ops” under the Assignments folder.</p> <ul style="list-style-type: none"> ● Select assignments in "PT2 – To Be Printed" (Tip: Click “Op Period” column header) ● "Change Attributes”, set Operational Period = "PT3 – Printing", "Update" 	5.1
<p>In SARTopo, create a SARTopo Backup GPX file.</p> <ul style="list-style-type: none"> ● "Export", "Download SARTopo Backup" ● Select all objects ● "Export". Save to C:/IncidentData/2018-11-16_A/Assignments/2018-11-16_A.gpx <p>Run the TaskPrep Utility</p> <ul style="list-style-type: none"> ● Double-click on the TaskPrep icon on the computer's desktop. ● If this is the first run for the exercise, see Job Aid 04B - Initial TaskPrep Run, otherwise just click “Next” <p>On the Select Assignments dialog:</p> <ul style="list-style-type: none"> ● Select the “PT3 Printing” Operational Period, "Generate" ● Black screen(s) will flash up and then a message reporting the number of assignments files were created for. 	5.5
<p>In File Explorer, open C:/IncidentFolder/2018-11-16_A/Assignments/ToBePrinted/ folder.</p> <p>For each TAF file in</p> <ul style="list-style-type: none"> ● Double-click the file. It should open in Adobe Acrobat. ● Select "Print on both sides of paper", and "Flip on long edge", select 1 copy ● Click "Print” <p>Select all of the files you just printed and move them from the ToBePrinted folder to the Printed folder</p>	5.6
<p>In SARTopo, move assignments in "PT3 – Printing" to "PT4 – To Be Assigned"</p> <ul style="list-style-type: none"> ● Click “Bulk Ops” under the Assignments folder, select "PT3 – Printing" assignments ● "Change Attributes, set Operational Period to "PT4 – To Be Assigned" , "Update" 	5.8

	SARTopo Exercise	Job Aid #05
	Prepare GPS Unit for Tasking	


Steps	SOG#3
<p>In SARTopo, export a gpx file with all assignment shapes: <i>Note: this step does not need to be repeated with each GPS. Repeat as needed when new assignments have been generated by plans.</i></p> <ul style="list-style-type: none"> ● Select “Export” from the top bar. ● Select “Download GPX File”. ● Click “Check/Uncheck All” to check all items. ● Click the check box to select all Segments (if assignments have been created that are not based on Segments, you may want to select them as well) ● Click “Export” ● Save the file to C:/IncidentData/2018-11-16_A/Assignments/GPS_Files/2018-11-16_A.gpx 	5.4
<p>Write the gpx file containing all segments to the GPS</p> <ul style="list-style-type: none"> ● Connect the GPS unit with USB cable to the computer (or plug in orange thumb drive ● Computer will chime with the connected tone. It may take a minute or two to save the tracks and to connect. ● Two windows will open. The order in which they open may vary. <ul style="list-style-type: none"> ○ One will be a small window titled "Assignment ID". <ul style="list-style-type: none"> ■ Close it by clicking the "Cancel" button. ○ The other will be a file explorer window for the GPS. <ul style="list-style-type: none"> ■ Navigate to the Garmin\GPX folder. ■ If tracks appear from the current incident, the GPS should be set aside to be processed per Job Aid #10 and another GPS chosen for this assignment. ■ If the tracks and waypoints on the GPS are from a previous incident, delete them so that they will not confuse the field team and to free memory on the GPS. To delete, select the files and press the Delete Key. ■ Copy C:/IncidentData/2018-11-16_A/Assignments/GPS_Files/2018-11-15_A.gpx to the Garmin\GPX folder. 	5.7
Place the GPS or Orange thumb drive on the “Tasks to be assigned” table	

	SARTopo Exercise	Job Aid #05
	Prepare GPS Unit for Tasking	Pg. 1 of 1


Steps	SOG#3
<p>In SARTopo, export a gpx file with all assignment shapes:</p> <p><i>Note: this step does not need to be repeated with each GPS. Repeat as needed when new assignments have been generated by plans.</i></p> <ul style="list-style-type: none"> ● Select “Export” from the top bar. ● Select “Download GPX File”. ● Click “Check/Uncheck All” to check all items. ● Click the check box to select all Assignments ● Click “Export” ● Save the file to C:/IncidentData/2018-11-16_A/Assignments/GPS_Files/2018-11-15_A.gpx 	5.4
<p>Write the ALL_GPX.gpx file to the GPS</p> <ul style="list-style-type: none"> ● Connect the GPS unit with USB cable to the computer (or plug in orange thumb drive ● Computer will chime with the connected tone. It may take a minute or two to save the tracks and to connect. ● Two windows will open. The order in which they open may vary. <ul style="list-style-type: none"> ○ One will be a small window titled "Assignment ID". <ul style="list-style-type: none"> ■ Close it by clicking the "Cancel" button. ○ The other will be a file explorer window for the GPS. <ul style="list-style-type: none"> ■ Navigate to the Garmin\GPX folder. ■ If tracks appear from the current incident, the GPS should be set aside to be processed per Job Aid #10 and another GPS chosen for this assignment. ■ If the tracks and waypoints on the GPS are from a previous incident, delete them so that they will not confuse the field team and to free memory on the GPS. To delete, select the files and press the Delete Key. ■ Copy C:/IncidentData/2018-11-16_A/Assignments/GPS_Files/2018-11-15_A.gpx to the Garmin\GPX folder. 	5.7
Place the GPS or Orange thumb drive on the “Tasks to be assigned” table	

	SARTopo Exercise	Job Aid # __
	Brief a Task	Pg. 1 of 1


Steps	SOG#3
Review the list of task and travel map formats available in Job Aid #02 - Print Maps. Ask Ops Support for sufficient number of copies of the chosen maps for the next batch of tasks. .	6.1
Add an entry to the paper Task Assignment Log which is stapled to the front of the Tasks in Progress folder . Write Dispatch Number on the paper TAF in the “Dispatch Number” box. Use the format pp-nn where pp is the operational period and nnn is the next sequential number (eg 01-01)	6.1
Get a radio and GPS for the team. If not enough GPS units, virtual teams can be issued an orange thumb drive.	
Fill out additional fields on the TAF as usual, including the team identifier (e.g. Alpha), the GPS unit and Radio issued and briefer. and check in times. Collect a phone number from the FTL for teams actually going out in the field..	6.1
Setup GPS unit <ul style="list-style-type: none"> ● Turn GPS Unit on ● Select "Track Manager" ● Select “Current Track” ● Select “Clear Current Track” ● Select “Yes” (Clear current track) ● Select assignment GPX file (e.g. "OPS006") ● Select "Show on Map" ● Select "View Map" 	6.1
Tell the FTL what team size is desired. For an area search, the desired team size should be listed in the task description. If it’s not, ask plans Have FTL gather a team from staging (people for real tasks or blue or green T-Cards for virtual task) and fill in team member names.	
When FTL returns the TAF, make a copy of the front of the TAF using the black-and-white multi-function printer. <ul style="list-style-type: none"> ● Brief the FTL using the Briefing Checklist on the TAF <ul style="list-style-type: none"> ○ If its an area task, also brief on searcher spacing If it's not specified in the task description, ask plans. ● Give the FTL the original TAF and maps(s) 	6.1
. Note the time out on the TAF and on the task assignment log Place the copy of the TAF and a map in the “Tasks in Progress” folder.	

	SARTopo Exercise	Job Aid #07
	Mark task in progress	Pg. 1 of 1


Steps	SOG#3
As time permits, make a copy of the Task Assignment Log and update tasks that are in progress. If there is not time, the information can be updated when the task is complete.	
<p>In SARTopo, edit the assignment by clicking the pencil icon next to the assignment in the left menu bar.</p> <ul style="list-style-type: none"> ● Set "Number" to the Dispatch Number, e.g. "01-01". ● Change Operational Period to the operational period in which the task was executed. (e.g. "01", "02", or "03") ● Select Resource Type used. ● Select the Team Size if it has changed ● Change Status to "INPROGRESS" and click "OK". 	6.2

	SARTopo Exercise	Job Aid #08
	Record a Clue	Pg. 1 of 1


Steps	SOG#3
Ask Operations Section Chief if all or just relevant clues are to be loaded to SARTopo.	
Fill out the paper clue report and log the clue on the paper clue log.	6.3
<p>In SARTopo:</p> <p>If coordinates are known, click “Add”, “Add Clue”</p> <ul style="list-style-type: none"> ● Enter Clue # in the "Label" ● Enter the coordinates in both the "Coordinates". ● If the assignment ID for the team that reported the clue is known, select it, otherwise leave it blank. ● Record the instructions given to the team about whether to Collect, Mark or Ignore the clue. ● Record the name of the team that found the clue in the "Location" field. ● Click "OK" <p>If location on map is known and the coordinates are not, right-click the location on the map, and select “New”, “Clue”. Enter the other details as above.</p>	6.3
If you recognize a direction of travel or other significance in the clues, notify the Operations Section Chief.	

	SARTopo Exercise	Job Aid #09
	Debrief a task	Pg. 1 of 1

Steps
Log "Time In" on Task Log and TAF
Obtain a blank debrief form and debrief the team.
Attach the debrief form to the base copy of the TAF. Return the original to the FTL. <ul style="list-style-type: none"> ● <i>Do we want to collect subjective POD?</i>
Place GPS Unit and TAF with debrief form on completed tasks table
Instruct FTL to return to staging and have all of their resources (including virtual) made “available” if has not already done so.

	SARTopo Exercise	Job Aid #10
	Complete a task in SARTopo	Pg. 1 of 2

Steps	SOG#3
<p>In SARTopo, edit the assignment by clicking the pencil icon next to the assignment in the left menu bar.</p> <p>If the task has yet been updated since it was assigned:</p> <ul style="list-style-type: none"> ● Set "Number" to the Dispatch Number, e.g. "01-01". ● Change Operational Period to the operational period in which the task was executed. (e.g. "01", "02", or "03") ● Select Resource Type used. ● Select the Team Size if it has changed <p>Mark the task complete:</p> <ul style="list-style-type: none"> ● Change Status to "COMPLETED" and click "OK". 	7.2
<p>Download the GPS Tracks:</p> <ul style="list-style-type: none"> ● Connect the GPS unit with USB cable to the computer or insert the Orange thumb drive into the computer. Computer will chime with the connected tone. It may take a minute or two to save the tracks and to connect. ● Two windows will open. The order in which they open may vary. <ul style="list-style-type: none"> ○ One will be a file explore window for the GPS <ul style="list-style-type: none"> ■ Navigate to the Garmin\GPX folder window ■ Delete the 2018-11-16_A.gpx file, but no other files at this time! ■ Leave the\Garmin\GPX folder window open ○ Another will be a small window prompting for the Assignment ID <ul style="list-style-type: none"> ■ In the small window, enter the Assignment ID from the TAF (eg OPS001 or A01-1 ■ Click "OK". A second small window will open. Enter the GPS Id from the label on the GPS unit or thumb drive and click OK. If it's a personal GPS, enter the person's name or initials. ■ A message box will tell you the download is complete. Click OK. ● Open the C:\IncidentData\gpxutil_data folder (there is a shortcut on the desktop). You should see the GPX files in this folder. If not, ask for help. 	7.3
<p>In SARTopo, import the GPS Track:</p> <ul style="list-style-type: none"> ● Click the assignment name in the Assignment Folder. ● Click "Import Tracks", "Choose Files" <ul style="list-style-type: none"> ○ Navigate to the C:\IncidentData\gpxutil_data\ folder, Select the track and waypoints file recorded by the team. If there is question as to whether to select a file, go ahead and select it now. Click "Open". ● The tracks in the selected file(s) are listed along with their distance from the map. <ul style="list-style-type: none"> ○ Uncheck any tracks that should not be associated with this assignment. These might include very short tracks or tracks from a previous search or assignment shapes included in the "2018-11-16_A.gpx" file that wasn't deleted above. ○ Click "Import". 	7.5

	SARTopo Exercise	Job Aid #10
	Complete a task in SARTopo	Pg. 2 of 2

<p>In SARTopo, print a completed task map</p> <ul style="list-style-type: none"> ● Click the assignment name in the left menu bar. ● A pop-up for the assignment appears. ● Click “Print Map”. A PDF file will be created with the map for the single assignment. The map is generated at 1:12000. ● Print the map <p>Attach the complete task map to the TAF and debrief form. Place in the "Tasks Completed" paper folder in dispatch number order.</p>	7.7
<p>Return to the Garmin\GPX folder window.</p> <ul style="list-style-type: none"> ● If the GPS is a MARG GPS or thumb drive, delete any files from the GPS by selecting them and pressing the Delete key. Do not delete the "Current" and "Nav" folders. ● If the GPS will be used for another task: <ul style="list-style-type: none"> ○ If the 2018-11-15_A.gpx file has not been recently regenerated, see Job Aid 05 - Prepare GPS Unit for Tasking to regenerate it ○ Copy C:/IncidentData/2018-11-16_A/Assignments/GPS_Files/2018-11-15_A.gpx to the Garmin\GPX folder. ● Open the system tray hidden icons and click the USB "Safely Remove Hardware and Eject Media" icon. <ul style="list-style-type: none"> ○ Click "Eject USB Mass Storage Device" for the Garmin Etrex ○ Disconnect the GPS unit or thumb drive 	7.3
<p>If the GPS unit is one of MARG's, clear the current track. (This step not needed for the Orange thumb drives).</p> <ul style="list-style-type: none"> ● Turn GPS Unit on ● Select "Track Manager" ● Select “Current Track” ● Select “Clear Current Track” ● Select “Yes” (Clear current track) 	7.3
<p>Place the GPS or Orange thumb drive on the “Tasks to be assigned” table</p>	

	SARTopo Exercise	Job Aid #11
	Field Control	

When an FTL has completed their track, go to their workstation and have them show you their track.

Look at their area spacing and number of searchers and make sure the line makes sense. There may be a teachable moment, but not all mistakes need to be corrected. Consider having the FTL create a “hole” in the searched area to give plans an “opportunity” to practice finding it.

For area tasks:

If FTL is comfortable with SARTopo, have them create a buffer to see if they passed over the area of a clue or subject, otherwise you can do it yourself. *Note that we should do this for more tasks than the ones we suspect are close, so the players don't get a hint that they might be close.*

- Ask them what their start line length is, or click on it to have SARTopo tell you
- Add, Add Buffer, enter half the start line length, click OK
- Label: “99-99 Buffer” where 99-99 is the task number, eg “02-01 Buffer”
- Check the “Snap to” menu in the upper right, if not already selected, select “Lines”
- Snap to their track

Optionally, you can export their track to a thumb drive and take it to a white cell computer and check it against plotted points.

Here's an aid for helping decide if a detection was made:

Determine ESW (in meters) for this assignments (table shows winter values). Assume “Mixed Veg” unless actual is known.		Heavy Veg	Mixed Veg	Open
	High Vis Subject	45	95	150
	Low Vis Subject	18	42	59
	High Vis Clue	5	7	10
	Low Vis Clue	3	7	10

Coverage = Searcher Spacing / ESW

Look up approximate POD based on Coverage -> Or calculate $POD = 1 - (EXP(-Coverage))$	Coverage	POD	Coverage	POD	Coverage	POD
	.22	20%	.69	50%	1.20	70%
	.36	30%	.92	60%	1.61	80%
	.51	40%	1.00	63%	2.30	90%

If a clue or subject was detected, give the FTL the coordinates and then have the team radio it in. Another teachable moment

Ask the FTL if they were successful in getting the track downloaded to the GPS and assist them or get assistance for them if not.

Have FTL proceed to debriefing.

	SARTopo Exercise	Job Aid #12A
	Virtual Field Task - Linear	Pg. 1 of 1

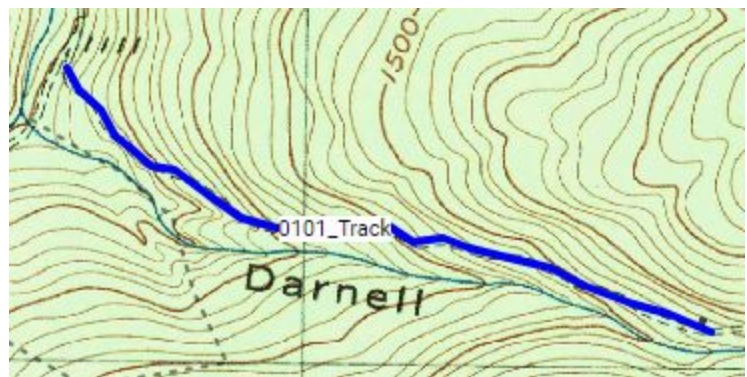
Steps

Go to SARTopo Virtual Field Workstation. It should be signed into SARTopo, centered on the general search area, with the USGS 7.5" background layer. Ask for help if needed.

Center the map on your search area. Tip: Click and drag the map around

Draw a line to represent the path of the team. See blue line in the example.

- Click Add, Add Line
- Label: "99-99 Track" where 99-99 is your task number, eg "01-01 Track"
- Single click the middle of the start line. Then single click for the each bend in the track. Double click to end the line.
- You can make the line any color



Export the track to the GPS or thumb drive given to you at briefing.

- Export
- Download GPX File
- Uncheck All
- Check your line, eg "02-01 Track"
- Navigate to "Garmin GPS", "Garmin", "GPX"
- Click "Save"

Remove the GPS unit and take it, your TAF and map and your worksheet to Field Control. Do not delete your line from SARTopo.



SARTopo Exercise

Job Aid #12B

Virtual Field Task - Area

Pg. 1 of 1

Steps

Calculate length of search line:

- **Number of searchers** X **spacing between searchers** (from briefing or TAF)

Go to SARTopo Virtual Field Workstation. It should be signed into SARTopo, centered on the general search area, with the USGS 7.5" background layer. Ask for help if needed.

Center the map on your search area. Tip: Click and drag the map around

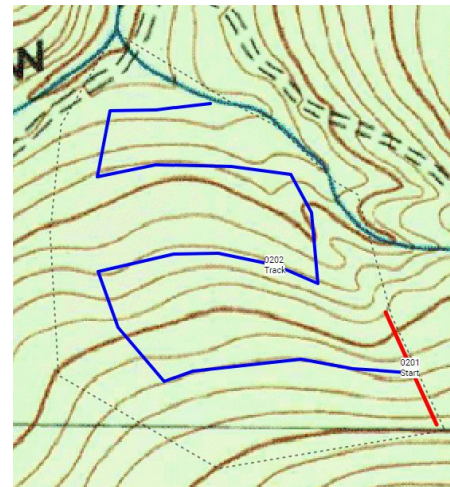
Consider terrain and decide where to start the team.

Draw the start line for the team (red line in the example). See "Job Aid 12C - Virtual Areal Field Task, Drawing the Line" for help drawing a line.

- Label: "**99-99 Start**" where 99-99 is your task number, eg "02-01 Start"
- **Length** should approximate the length calculated in the first step above.

Draw a 1km line to represent the path of the middle searcher. Start in the middle of the line drawn in the previous step and draw sweeps about a search line apart. See blue line in the example.

- Label : Label: "**99-99 Track**" where 99-99 is your task number, eg "02-01 Track"
- **Length** should be approximately **1km**



Note: If the maps is getting cluttered and you're having difficulty drawing, ask for help.

Export the track to the GPS or thumb drive given to you at briefing.

- Export
- Download GPX File
- Uncheck All
- Check your line, eg "02-01 Track"
- Navigate to "Garmin GPS", "Garmin", "GPX"
- Click "Save"

Remove the GPS unit and take it, your TAF and map and your worksheet to Field Control. Do not delete your lines from SARTopo.



SARTopo Exercise

Job Aid #12C

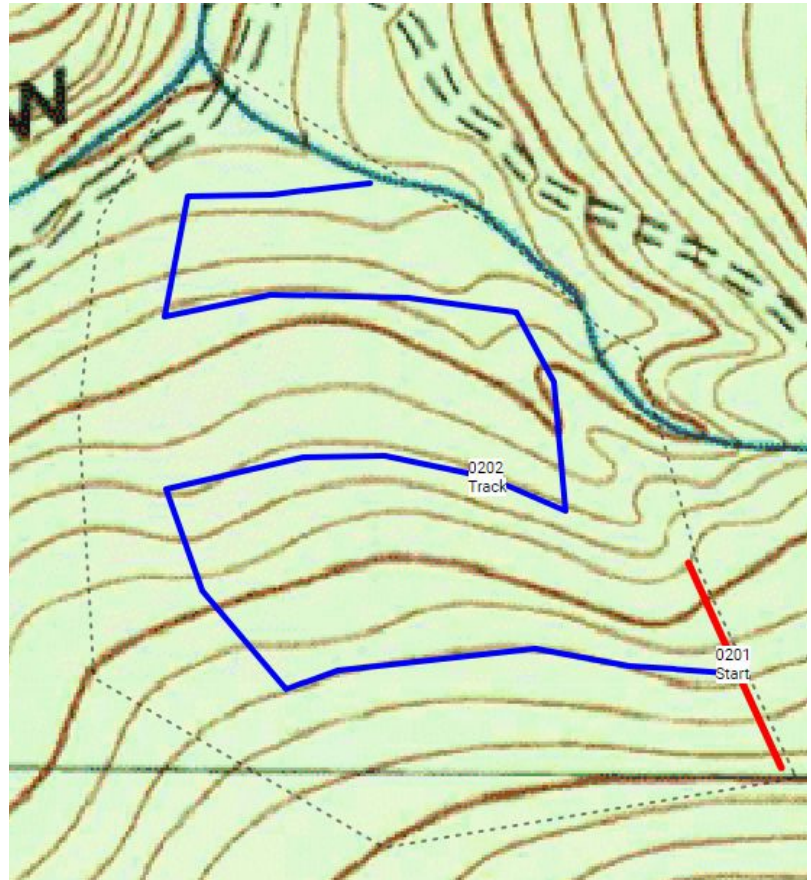
Virtual Area Field Task, Drawing the Line

Pg. 1 of 1

Draw the start line for the team (red line in the example). Draw a line to indicate where the search team would line up to start. See the red line to the right.


Watch the display in the upper right hand corner above the map to verify line is the desired approximate length of the search line from the first step above.

- Click Add, Add Line
- Label: “99-99 Start” where 99-99 is your task number, eg “02-01 Start”
- Single click to start the line, double click to end.
- You can make the line any color



Draw a 1 km line to represent the path of the middle searcher. Start in the middle of the line drawn in the previous step and draw sweeps about a search line apart. See blue line above.

- Add, Add Line
- Label : Label: “99-99 Track” where 99-99 is your task number, eg “02-01 Track”
- Single click the middle of the start line. Then single click for the each bend in the track. Double click to end the line when it is about 1 km long.
- You can make the line any color

	SARTopo Exercise	Job Aid #13
	Create Regions and Segments	Pg. 1 of 1

Steps	SOG#3
Determine regions and draw on paper map. Make copies for each planner who is drawing segments (OPS Support can make copies)	
Add segments as polygons in SARTopo. <ul style="list-style-type: none"> ● Label: Segment ID (eg A01) ● Folder: Segments 	4.4
As time permits, update POD_and_POS_calculator: <ul style="list-style-type: none"> ● <i>link removed, ask patty.lindsay@gmail.com if interested</i> ● Enter regions into “Mattson Data” sheet ● Collect and enter Mattson data from planners ● Add segments to “Segment Data” <ul style="list-style-type: none"> ○ Use Bulk Ops in Segment folder to get a list of segments and acres ○ Assume “Mixed” vegetation unless the area is known to be open or predominantly dense brush. The typical forested area that is a mix of trees and dense brush would be “Mixed”. An area known to have very little or no dense brush, but is forested, would be “Open”. 	




SARTopo Exercise

Job Aid #14

Create Area Assignments

Pg. 1 of 2

Steps	Ref																																															
<p>Calculate Search Spacing</p> <table border="1" data-bbox="196 520 1279 758"> <tr> <td rowspan="4">Determine ESW (in meters) for this assignments (table shows winter values). Assume “Mixed Veg” unless actual is known.</td> <td></td> <td>Heavy Veg</td> <td>Mixed Veg</td> <td>Open</td> </tr> <tr> <td>High Vis Subject</td> <td>45</td> <td>95</td> <td>150</td> </tr> <tr> <td>Low Vis Subject</td> <td>18</td> <td>42</td> <td>59</td> </tr> <tr> <td>High Vis Clue</td> <td>5</td> <td>7</td> <td>10</td> </tr> <tr> <td></td> <td>Low Vis Clue</td> <td>3</td> <td>7</td> <td>10</td> </tr> </table> <table border="1" data-bbox="196 835 1292 1024"> <tr> <td rowspan="4">Lookup coverage for desired POD (based on Coverage = $-\ln(1 - \text{POD})$)</td> <td>POD</td> <td>Coverage</td> <td>POD</td> <td>Coverage</td> <td>POD</td> <td>Coverage</td> </tr> <tr> <td>20%</td> <td>.22</td> <td>50%</td> <td>.69</td> <td>70%</td> <td>1.20</td> </tr> <tr> <td>30%</td> <td>.36</td> <td>60%</td> <td>.92</td> <td>80%</td> <td>1.61</td> </tr> <tr> <td>40%</td> <td>.51</td> <td>63%</td> <td>1.00</td> <td>90%</td> <td>2.30</td> </tr> </table> <p>Calculate Searcher Spacing (in meters) = ESW / Coverage</p> <p>Or assume Searcher Spacing = ESW to get a coverage of 1 and POD of 63%</p>	Determine ESW (in meters) for this assignments (table shows winter values). Assume “Mixed Veg” unless actual is known.		Heavy Veg	Mixed Veg	Open	High Vis Subject	45	95	150	Low Vis Subject	18	42	59	High Vis Clue	5	7	10		Low Vis Clue	3	7	10	Lookup coverage for desired POD (based on Coverage = $-\ln(1 - \text{POD})$)	POD	Coverage	POD	Coverage	POD	Coverage	20%	.22	50%	.69	70%	1.20	30%	.36	60%	.92	80%	1.61	40%	.51	63%	1.00	90%	2.30	
Determine ESW (in meters) for this assignments (table shows winter values). Assume “Mixed Veg” unless actual is known.			Heavy Veg	Mixed Veg	Open																																											
		High Vis Subject	45	95	150																																											
		Low Vis Subject	18	42	59																																											
	High Vis Clue	5	7	10																																												
	Low Vis Clue	3	7	10																																												
Lookup coverage for desired POD (based on Coverage = $-\ln(1 - \text{POD})$)	POD	Coverage	POD	Coverage	POD	Coverage																																										
	20%	.22	50%	.69	70%	1.20																																										
	30%	.36	60%	.92	80%	1.61																																										
	40%	.51	63%	1.00	90%	2.30																																										
<p>Calculate the Team Size (assumes 1 km track): (Acres * 4) / Searcher Spacing</p>	see below																																															
<p>Creating first assignment for a segment: Right-click the segment on the map, and click "Convert", then "Copy as Area Assignment"</p> <ul style="list-style-type: none"> • Letter: segment name plus “-1”, eg A01-1 • Operational Period: PT2 Ready to Print • Team size: Leave blank, put team size in the details. • Details: Describe task for the field team, include team size and desired searcher spacing • Prepared By: your name (eg P Lindsay) • Status: Prepared 	SOG#3 4.5																																															
<p>Creating subsequent assignment for a segment: Right-click the previous assignment on the map, and “Copy”, then "Copy as Area Assignment"</p> <ul style="list-style-type: none"> • Letter: add 1 to the previous assignment “Letter”, e.g. A01-1 becomes A02-1 • Operational Period: PT2 Ready to Print • Details: Revise if needed • Status: Prepared 	SOG#3 4.5																																															

	SARTopo Exercise	Job Aid #14
	Create Area Assignments	Pg. 2 of 2

Team Size calculation based on:

Team Size = area / (track length * searcher spacing)

1 acre = 4047 m²

track length assumed to be 1km

Team Size

= area / (track length * searcher spacing)

= (Acres * 4047 m²) / (1000m * searcher spacing)

= (Acres * 4.047) / searcher spacing

FOR THIS SCENARIO (not all scenarios!):

If searcher spacing is assumed to be roughly 40m (ESW for low vis subject in winter, mixed vegetation in winter is 42m), a desired track length of 1km, and a desired POD of 63%, or coverage of 1.00, a rough calculation is:

Searcher spacing = ESW ≈ 40m

Team Size = (acres * 4) / 40

= acres / 10

- **Divide acres by 10 to get number of searchers**



SARTopo Exercise

Job Aid #15

Review of Completed Tasks

Pg. 1 of 2

Steps

In the Completed Tasks folder:

- Review debriefed TAF
- Review completed task map
- Does the task need to be repeated?
- Were there any recommendations by the FTL for follow-up?

In SARTopo:


Determine single human track length:

- If GPS track includes travel to the search area:
 - Right click anywhere on the map
 - Choose “Measure Distance”
 - Check the “Snap to” menu in the upper right, if not already selected, select “Lines”
 - Click where the searching started
 - Click where the searching ended. The track should be highlighted between the start and end point.
 - Note the distance
- Otherwise:
 - Click the name of the GPS Track, the distance will appear in the lines pop-up menu

In SARTopo:

To visually inspect searched area for holes (assumes that GPS track represents searcher in the middle of the line), create a buffer polygon along the GPS track whose total width is that of the search line:

- Calculate search team sweep length = number of searchers * searcher spacing
- Add, Add Buffer, enter half search team sweep length, click OK
 - Label: “Ann-n Buffer” where Ann-n is the segment number, eg “A01-1 Buffer”
 - Folder: “Assignment Buffers” (may need to create this folder)
 - Check the “Snap to” menu in the upper right, if not already selected, select “Lines”
 - Hover the cursor over start of the track, the track should get bolder
 - Click (without moving mouse)
 - Hover the cursor over the end of the track (not including travel to search area), the track should get bolder between the start and end
 - Double click (without moving mouse)

	SARTopo Exercise	Job Aid #15
	Review of Completed Tasks	Pg. 2 of 2

Open POD_and_POS_Calculator:

- *link removed, ask patty.lindsay@gmail.com if interested*

Enter following data in “Task Data” in the POD_and_POS_Calculator:


From Debriefed TAF:

- Segment name
- Task ID (for identity purposes only, not used in calculations)
- Day vs Night
- Observed Vegetation: Heavy , Mixed, Open
- # of ground searchers
- searcher spacing
- field determined ESW if available


Determined in previous step:

- Single human searcher track length


See “Results” tabs for calculations

	SARTopo Exercise	Job Aid #16
	Request Remote Support	Pg. 1 of 1


Steps
Appoint a Remote Support On-scene Liaison (RS-OSL)
Follow the Remote Support Corps “RS-OSL One Pager”
If Remote Support will be assisting in planning: <ul style="list-style-type: none">● Recommend Remote Support do their work directly on the SARTopo map. Then generate TAFs and maps on scene.● Share name of incident map with Remote Support● Share applicable Job Aids<ul style="list-style-type: none">○ Job Aid 03A - Create linear reflex assignments○ Job Aid 13 - Create Regions and Segments○ Job Aid 14 - Create assignments for segments○ Job Aid 15 - Review of Completed Tasks

	SARTopo Exercise	Job Aid #17
	Staging	Pg. 1 of 1

Steps
<p>Have each person fill-out a T-Card on the first day that they arrive, particularly</p> <ul style="list-style-type: none"> ● Name ● SAR Qualifications ● Cell phone ● Interests ● Emergency contact info
<p>Each day at start of shift or as people arrive:</p> <ul style="list-style-type: none"> ● Have each person sign-in on the sign-in sheet ● Have each driver fill out the vehicle log ● Place T-Card in sorter as “Available” ??? how to identify which job to assign to
<p>Each day at end of shift or as people depart:</p> <ul style="list-style-type: none"> ● Have each person sign-out on the sign-in sheet ● Place T-Card back on sign-in table in stack for the next day if they plan to return ● Otherwise, place in an archive stack
<p>If an FTL comes looking for team members:</p> <ul style="list-style-type: none"> ● Briefing should have told them how the desired number of searchers. If it's an “outside” search, that may not be possible, give them what you have. ● If it's an “outside” search, find real people to be on the team. If it's a virtual search, choose the desired number of “fake” searchers (blue or green T-Cards). ● The FTL will write the searchers on the TAF and return to briefing ● Insert the white, blue or green T-Cards under the team call sign, with the FTL’s card on top
<p>When team returns from debrief:</p> <ul style="list-style-type: none"> ● Move T-Cards to “Available for Assignment” or “Out of Service / R&R” as appropriate
<p>At shift change, T-Cards for real personnel will be checked for job interests and re-assigned for the next operation period.</p>

	SARTopo Exercise	Job Aid #18
	Setup Projector	Pg. 1 of 1

Steps	SOG#3
Connect projector to any of the laptops being used that are in proximity of the projector screen or wall. The laptop can continue to be used for its original purpose. The MARG laptops have an HDMI port and do not have a VGA port. If the projector support HDMI, use an HDMI cable. If it only supports VGA, use a VGA-HDMI adapter.	2.9
On the laptop, set the display options for "Extended Display". <ul style="list-style-type: none"> ● Right click the desktop, click "Display Settings". ● Change the "Multiple Displays" setting to "Extend these displays" 	2.9
Open a new tab in Chrome, and connect to SARTopo. Open the 2018-11-6_A map	2.9
Configure SARTopo to display the Task Progress Map, refer to 9.4 Task Progress Map.	9.4
Drag the tab to the projector display by clicking on the Chrome tab and dragging it to the secondary display. The Task Progress Map will continuously update as changes are made.	

	SARTopo Exercise	Job Aid #20
	Printing	Pg. 1 of 1

Steps	SOG#3
<p>Connect to the WVMARG-1 laptop.</p> <ul style="list-style-type: none"> ● In a File Explorer window, click "Network". ● When opening the Network folder, a banner may appear that says "Network discovery is turned off. Network computers and devices are not visible. Click to change." If it doesn't appear, skip to next step. <ul style="list-style-type: none"> ● Click the yellow banner. ● Click "Turn on network discovery and file sharing". ● Click "No, make the network that I am connected to a private network". ● Click "WVMARG-1", if you don't see it, skip to "Printing Alternative" below <ul style="list-style-type: none"> ○ If you are prompted with a username and password, enter "MARG" for both and click "OK". ● Right click the printer name, "HP Color LaserJet Pro MFP M277 PCL6 (Copy1)" Click "Connect" <ul style="list-style-type: none"> ○ A pop-up message appears while the printer is installed. If the driver was not previously installed on this computer, it will be copied from WVMARG-1 ○ You can then select the printer in whichever application you are working in. ○ The printer will be identified as "HP Color LaserJet Pro MFP M277 PCL6 on WVMARG-1". ● If you encounter problems, ask Patty or skip to "Printing Alternative" below 	2.6
<p><u>Printing Alternative:</u></p> <ul style="list-style-type: none"> ● Get an Orange thumb drive from OPS Support ● Place file to print on thumb drive ● Take thumb drive to WVMARG-1 laptop in OPS Support and request to have it printed 	