



Standard Operating Procedure (SOP) 3: Data management and quality control version 1.0

Vehicle Management Plan Monitoring Protocol

Denali National Park and Preserve

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The main narrative for the Protocol for Monitoring related to the Vehicle Management Plan is available from the NPS Integrated Resource Management Applications (IRMA) Data Store: (<https://irma.nps.gov/DataStore/Reference/Profile/2258362>).

SOP 3 – Data management and quality control

Version 1.0 (December 2018)

Revision History Log:

Previous Version #	Revision Date	Author	Changes Made	Reason for Change	New Version #
Add rows as needed for each change or set of changes associated with each version.					

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SOP 3.0 – Introduction

SOP 3 outlines the procedures used by observers for the management and quality control of the National Park Service Observation (NPSO), Ride Observer and Record (ROAR), traffic counter, and JV data collected to evaluate indicators and capacity metrics related to the Vehicle Management Plan (VMP).

SOP 3.1 – Data Management

SOP 3.1.1 – NPSO

At the end of the workday, use the field laptop (which is not the same as the office laptop or desktop) and copy the data file to the directory `C:\Users\Public\NPSObs_backups` using the convention `NPSO_laptop_MMDD_backup`, where MMDD denotes the month (MM) and day (DD) of the observation. At the end of the field patrol (i.e. back at the office), copy `NPSO_laptop_MMDD` and `NPSO_laptop_MMDD_backup` files onto a thumb (USB) drive and transfer to program directories on the NPS network at `T:\ResMgmt\Road_Ecology\Data`. If unable to transfer data from the field laptop to the program directory on the day of your return, leave a message with the crew lead or program manager that the task needs to be completed.

Examine individual observation datasets within `NPSO_laptop_MMDD` and copy sheep gap, rest stop, and viewscape data into their respective master datasets. The master datasets are set-up prior to the start of the season as:

- `...\Indicators\SheepGap\SheepGapYYYY\SheepGap_YYYY_Data_MasterRaw.xlsx`
- `...\Indicators\RestStop\RestStopYYYY\RestStop_YYYY_Data_MasterRaw.xlsx`
- `...\Indicators\Viewscope\ViewscopeYYYY\Viewscope_YYYY_Data_MasterRaw.xlsx`

SOP 3.1.2.1 – ROAR

ROAR trip scheduling is stratified proportionally to the VTS schedule using early (before 0900), mid (0900–1200), and late-day (after 1200) start times. The crew lead maintains an Excel spreadsheet that keeps track of our bus schedule to make sure it reflects the VTS schedule, located:

`...\Data\Buses\Bus_Schedules\VTS\our_bus_schedule_YYYY.xlsx`

Enter the year's VTS schedule into the first tab ("YYYY Schedule"), which can be downloaded from the park's website at www.nps.gov/dena/planyourvisit/shuttles.htm. This will be used to show the target distribution of destinations and times of day for the regulatory year. In the second tab ("ROAR Obs") keep track of the buses actually ridden by REP staff by season, destination, and time. In the third tab ("YYYY Pivot", Figure 1), use pivot tables to determine the target destinations and times of day and the actual destinations and times of day for each season (Early, Peak, and Late, [SOP 1](#)). When new data is added to the ROAR Obs tab, be sure to refresh the Actual pivot tables to reflect the change in the actual schedule.

Version 1.0 Denali National Park and Preserve – Vehicle Management Plan (VMP)
Monitoring Protocol Standard Operating Procedure (SOP) 3:
Data management and quality control

	A	B	C	D	E	F	G	H	I	J	K	L	M
1	Target							Actual					
2								Date	(All)				
3	EARLY SEASON							EARLY SEASON					
4	Count of Destination	Column Labels						Count of Destination	Column Labels				
5	Row Labels	Toklat	EVC	WonderLake	Kantishna	Grand Total		Row Labels	Toklat	EVC	WL	Kantish	Grand Total
6	Early	9.26%	22.22%	9.26%	5.56%	46.30%		Early	14.58%	20.83%	12.50%	4.17%	52.08%
7	Mid	12.96%	11.11%	3.70%	1.85%	29.63%		Mid	20.83%	10.42%	4.17%	2.08%	37.50%
8	Late	12.96%	11.11%	0.00%	0.00%	24.07%		Late	4.17%	6.25%	0.00%	0.00%	10.42%
9	Grand Total	35.19%	44.44%	12.96%	7.41%	100.00%		Grand Total	39.58%	37.50%	16.67%	6.25%	100.00%
10													
11													

Figure 1. Target and Actual percentage of sampling of VTS schedule from Our Bus Schedule spreadsheet.

At the end of each trip, save each ROAR survey ([SOP 2](#)). When iPads are returned, the crew lead will transfer surveys to a master file geodatabase.

To transfer the data from the iPad into a ROAR file geodatabase (FGDB) in ArcGIS, you must have access to two tools:

- ParkObserver.pyt (Survey to FGDB)
- REP_Processing.tbx (Join Feature Class to UniqueID)

To upload iPad ROAR data to the computer:

1. Connect the iPad to the computer using the Lightning® connector cord
2. In iTunes, select the iPad icon next to the dropdown menu that says “Music”
3. Under the Settings Menu (far left) select Apps
4. Scroll down to File Sharing, select the Park Observer App
5. Within Park Observer Documents you should see surveys needing processing (they are labeled with their Unique ID; “iPad#_MMDDHH.poz”)
6. Select the .poz files and click “Save to” (or you can drag and drop) to save to these locations:
 - ...Data\ROAR iPads\MasterPOZs_YYYY
 - ...Data\ROAR iPads\BackupPOZs_YYYY
7. Once transferred, delete the files from the iPad using iTunes and in the Park Observer App

To convert the .poz files to a File Geodatabase format (FGDB):

1. Open ArcCatalog
2. Navigate to ParkObserver.pyt in the ArcToolbox at ...Data\ROAR\ParkObserver.pyt
3. Open the toolbox and run the script by double-clicking “Survey to FGDB”. In the prompt, navigate to the .poz file you want to process, then click OK
 - To convert more than one .poz file at a time, right click on Survey to FGDB and select “Batch”. Drag and drop the .poz files from the MasterPOZs folder

4. This script takes the .poz file (which is really a zipped file), unzips it, and imports all the data from .csv format to FGDB format
5. Once the .poz files have been converted to FGDB format, move the files from the Master folder to the Done folder (to keep track of what has already been converted)

To Join Feature Class to UniqueID:

1. In ArcCatalog open the REP_Processing toolbox
2. Open the model Join FC To UniqueID. The tool has no parameters, so click OK to let it run
 - a. The model must be updated at the beginning of every RRY to reference the correct location of the year's FGDB.
 - Right click Join FC to UniqueID > edit. Opens ModelBuilder (Figure 2).
 - Right click on the left-most blue oval ("ROAR_YYYY_v1.gdb"). Open.
 - You should see the filepath to last year's database in the master POZ folder. Change this filepath to match the current year's database location.
3. The Join FC To UniqueID will append the primary key information (UniqueID from Mission Properties [alias, Trip Introduction, ...]) to the table data of each observation feature and export the newly appended table data to .dbf format so that it can be imported to Access
 - a. Field appended by this process are: UniqueID, Observer, TripType, Destination, and Direction. Any field from the Trip Introduction feature can be added to this join by editing this script.

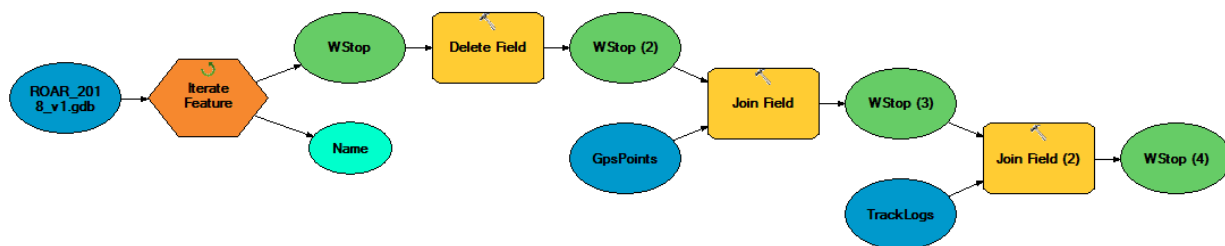


Figure 2. ModelBuilder view of join process to create a connection between the parent file and sibling data.

Now all iPad ROAR data is located in a geodatabase in the Master POZ folder. When you open all of this data in ArcMap for the first time, save the database as a project titled "ROAR_YYYY" where "YYYY" is the year in this location: *T:\ResMgmtRoad_Ecology\Projects*. Periodically throughout the year, save a backup ArcMap project in the same location, titled "ROAR_YYYY_backupMMDD".

SOP 3.1.2.2 – Wildlife Viewing

ROAR data are used to report an annual likelihood of viewing the “big five” of Denali’s wildlife species (caribou, Dall sheep, grizzly bear, moose, wolf) from the park road while riding a VTS bus.

Prepare and Export WStop data:

1. Open the current year’s ROAR ArcMap project file:
 - a) *T:\ResMgmtRoad_Ecology\Projects\ROAR_YYYY.mxd*
2. Open the Properties of the WStop Feature Class
 - a) Fields tab > Options > Show Field Name
 - b) Choose which fields will be visible. Check only:
 - Animal
 - Timestamp_Local
 - Latitude
 - Longitude
 - Destination
 - TripDirection
 - TripType
 - UniqueID
 - RoadMile
3. Open the Attribute Table of WStop Feature Class
 - a) Select by Attributes
 - Destination = ‘EVC’ OR Destination = ‘Wonder Lake’ OR Destination = ‘Kantishna’
 - Apply
 - Show selected records
 - b) Table Properties > Export > Selected records > Output table (type = Text File):
T:\ResMgmtRoad_Ecology\Data\Wildlife\WildlifeObs\Processing\YYYYROAR\WStopYYYY.txt

Prepare and Export WNoStop data:

1. Open the Properties of the WNoStop Feature Class
 - a) Fields tab > Options > Show Field Name
 - b) Choose which fields will be visible. Check only:
 - Animal
 - Timestamp_Local
 - Latitude
 - Longitude
 - Destination
 - TripDirection
 - TripType
 - UniqueID
 - RoadMile
2. Open the Attribute Table of WNoStop Feature Class
 - a) Select by Attributes
 - Destination = ‘EVC’ OR Destination = ‘Wonder Lake’ OR Destination = ‘Kantishna’

- Apply
 - Show selected records
- b) Table Properties > Export > Selected records > Output table (type = Text File):
T:\ResMgmt\Road_Ecology\Data\Wildlife\WildlifeObs\Processing\YYYYROAR\WNoStopYYYY.txt

Prepare text files for R analysis:

1. Open both *...WStopYYYY.txt* and *...WNoStopYYYY.txt* in Excel
 - To open .txt in Excel, Click Data > Import External Data > Import Data
 - Make sure you select “delineated” so your .txt file is separated into columns by the commas
2. Combine the data (retaining only one set of headings) into one worksheet and save as:
...ROARYYYY_AllfilesforR.csv
3. In a new worksheet establish tables to conduct VLookups for animal, trip type, destination, and direction using the appropriate tables from
"...Protocols\DataCollection\ROAR\ParkObserver\ROAR_park_observer_protocol_definitions_library_YYYY.xlsx"
4. Separate the date and time into separate columns
5. Rename columns to match the previous year (so that the R Script from the previous year will work)
6. Save the file as .csv

Create a *TripsYYYY* file:

1. Copy the entirety of the following columns from *...ROARYYYY_AllfilesforR.csv* and paste into a new Excel sheet:
 - UniqueID
 - TripType
 - Destination
 - TripDirection
2. Save As: *...TripsYYYY.csv*
3. Move UniqueID to Column A
4. Data tab > Remove Duplicates > select only Column A (UniqueID) > OK > Save the file

SOP 3.1.3 – Traffic counters

At the end of the regulatory year, use a new flash drive to download all data from the traffic counters (SOP 2). To transfer data to the computer:

1. Copy the data from flash drive in the folder “IRD_DATA” and paste on the Teams Drive under: *...Data\Traffic_counter\master data\YYYY\TRS\IRD_DATA*.

If a window pops up saying “There is already a file with the same name in this location”, choose “Copy but keep both files”. This is because all the traffic counters have the same naming system, so files collected on the same day from different counters will have the same name

2. And, copy the data into the (YYYY) folder on the flash drive. Do not erase data outside that folder on flash drive. This is the data that Road Reporter will be accessing. If a

window pops up saying “There is already a file with the same name in this location”, choose “Copy but keep both files”.

Road Reporter Setup (for the first time you use in the season):

1. The sites should already be preset in Road Reporter. If not, click on “Site”, “New”, and enter the Site Reference, Site ID, Location, and Site Directory
2. To setup directories for exporting data, select “Setup”.
 - Data Directory should be *C:\PROGRA~1\ROADRE~1\Default*
 - The Export Directory should be *T:\ResMgmt\Road Ecology\Data\Traffic counter\working data\YYYY\Excel\Exports*
 - The Flash Drive Path should agree with whatever port you are using on your computer
 - Files that are transferred from the flash drive to Road Reporter are saved at *C:\Users\your user name\AppData\Local\VirtualStore\Program Files (x86)*. Because it is an older program, Windows 7 puts it in the VirtualStore folder

Viewing and exporting traffic counter data:

1. Click the TRS icon on the toolbar to open the TRS interface
2. Select “Flash Drive” in the yellow data source window. (Note: Make sure the default “Flash Drive Path” in Setup/Directories is the correct drive for your Flash Drive)
3. Click “All data” to transfer data from flash drive into the software
4. Once data has transferred, close the TRS Interface window by selecting “Close”
5. Select the “Load” icon on the toolbar to access the data window. If all of the sites don’t pop up, double click on “Road Reporter” this should get all of the sites to pop up

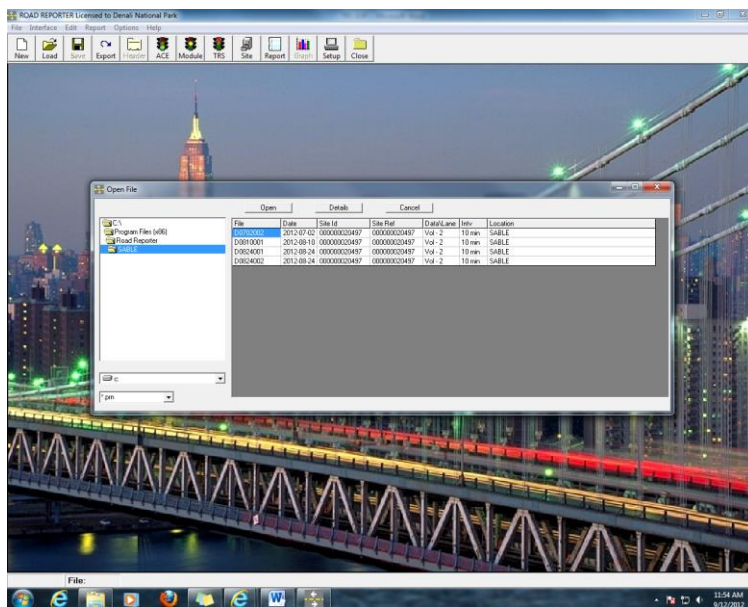


Figure 3. Screenshot of Road Reporter.

6. Select the site folder on the left side of the data window. Each site folder will contain all files for that given site. Click on "Date" at the top of the Date column to sort by date
7. Select the file on the right side of the data window and select "Open" on the top of the data window
8. Perform a visual check of the data by scrolling through the window – check that data was recorded (non-zero values in the columns) and that data are reasonable (no abnormally high values i.e 3 digit values). This can be done by graphing the file and looking for high numbers in the y-axis. Click "Graph" on the toolbar, select "Hourly" (here you can also note the Start and End Date/Time of the file) then click "Graph". Click "Next" to scroll through the days looking for abnormally high Volume counts on the y-axis. Also check to be sure that both east and west counts are registering. Abnormally high values are likely caused by low battery voltage
9. After scrolling through the data, close the window and perform data checks on each newly imported file by repeating the process outline above
10. Export data in Excel format to
...DataTraffic counter\WorkingData\YYYY\EXCEL EXPORTS
11. Click on "Export" on the tool bar. Make sure "Excel" is checked in right hand menu
12. Choose "Select File(s)", "Browse" and select the site and highlight the files you want to transfer. Click "Continue"
 - If you have multiple files for the same day, it will be necessary to export files with the same date separately and rename one of them tagged with "a" before

moving it to the counter's Excel Exports folder. This will avoid problems saving files with identical names.

13. Click "Export" to export your selected files
14. Once a message appears stating that the export is complete, close the data window and minimize Road Reporter
15. Go to the Excel Exports folder and move that site's new Excel files into the site folder. If it asks if you want to replace files say "No."
16. Compile each counter's individual files from EXCEL EXPORTS into the respective master in Master Data

SOP 3.1.4 – Savage Check Station

The paper datasheets used at the Savage Check Station (SCS) need to be entered into the database in Microsoft Access. That database is located here: *T:\Interp\Ops All, Savage Check Station\Savage Data*

To manually enter data from the SCS Bus Data Sheet:

1. On the purple screen (the home screen when you open the Access database), click "List of dates entered"
2. This will take you to a teal screen. Click "Add Date" in the top left. Or select one of the dates listed by double clicking on the box with the black arrow in the left column
 - If you select a date, you will need to click on "Locked" and enter the password "svgbox" before you can edit the entries

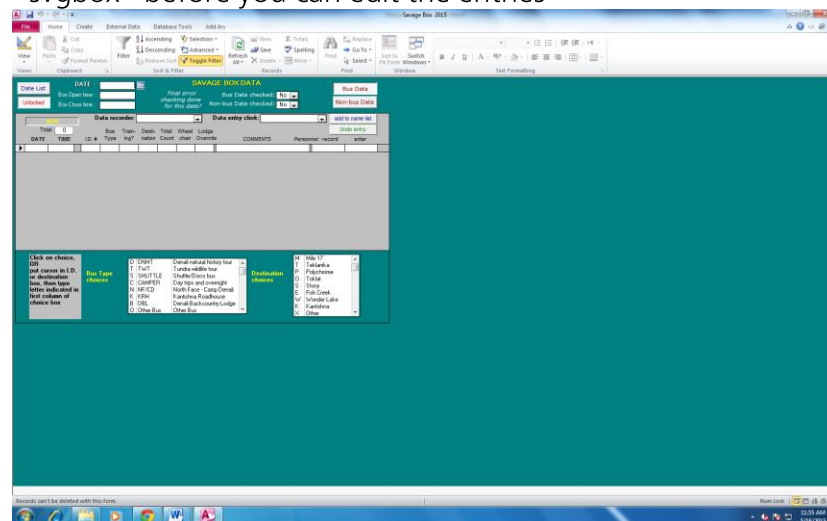


Figure 4. Screenshot of Savage database data entry screen.

3. If you clicked "Add Date", type the date in the date field
 - If you started a new date, type in "Box Open Time" and "Box Close Time" using military time (i.e. 6am = 06:00 or 9pm = 21:00)

4. Fill in "Data Entry Clerk" from the drop down menu. This is the person entering data into the computer
5. Enter the "Time" of each line of data. Use military time
6. Enter "I.D. #" to enter the bus number or permit number
7. Enter "Bus Type"
8. Enter "Destination"
9. Enter "Total Count" (total number of passengers)
 - For Kantishna lodge buses, enter "Lodge Overnight" (# of overnight lodge guests)
10. Enter any comments– spare buses, rescue buses, etc.
 - If "training" is written in the comments, make sure the bus type is "O" and there is an "X" under the "Training?" column. You do not have to type it in as well

To manually enter data from SCS Non–Bus Data Sheet:

1. On the purple home screen, click "List of Dates Entered"
2. This will take you to a teal screen. Click "Add Date" in the top left. Or select one of the dates listed by double clicking on the box with the black arrow in the left column
 - If you select a date, you will need to click on "Locked" and enter the password "svgbox" before you can edit the entries
3. Click the "Non–bus Data" button in the top right corner
4. Enter "Data Entry Clerk" in the drop down box
5. Enter "Time"
 - If the next entry is for a new date, or if it is the afterhours data from the day before, you must return to the date list and select a new date or add a date – it is not sufficient to change it in the "Date" column
6. Enter "Entry Type" – the letter code for the permit type listed at the top of the datasheet
7. Enter "Total Count" – number of people in vehicle
8. Enter "Destination" – farthest destination letter code
9. Enter any comments, including: permit #, driver's last name, affiliation, supervisor's last name, trip purpose

When you close out of the database, all of your entries are automatically saved.

SOP 3.2 – Data Quality Control

SOP 3.2.1 – Analog and digital matrix

Each NPSO is recorded on an analog (paper) datasheet, called a matrix, using the convention of observer's initials, time, date: WC 09:10 07/21 (Figure 5).

NPSO Sampling Matrix

OTHER TASKS	Year:	2018	Season:	Peak	Season Dates:	6/14-8/1
Check Traffic Counters?						
Trail Counters? – Savage		6-9	9-12	12-15	15-18	18-22
		Leave 30-60 minutes early if so				
21.6	Sheep Gap					
26	Viewscape					
30	Tek Rest					
37.6	Sheep Gap					
53.5	Toklat Rest					
52.8	Sheep Gap					
55	Viewscape					
60.6	Sheep Gap					
62	Viewscape					
66	Eielson Rest					
68	Viewscape					
68.5	Sheep Gap					
Grassy						
Bring:	☐ NPS Observation protocol ☐ ROAR protocol ☐ traffic counter binder and manual ☐ radio ☐ data sheets ☐ iPad & charger ☐ traffic counter batteries ☐ Garmin GPS ☐ laptop, charger & charging cord ☐ binos & rangefinder ☐ jump drive ☐ extra traffic counter					

T:\ResMgmt\Road_Ecology\Protocols\DataCollection\NPSObs\NPSO_sampling_matrix_2018.xlsx

Figure 5. Representation of the matrix used to record when NPSO observations have occurred on the Park Road in Denali National Park and Preserve.

The analog version of the matrix is entered into Excel to create a digital copy that can be leveraged with Excel formulas. Each observation at a site during the same time range for a season are input into the same cell that corresponds to that time and location and separated by one space using the format: "WC MM/DD HH:MM". The formula `=LEN(Cell)-LEN(SUBSTITUTE(Cell,"/",""))` uses the forward slash as a proxy to count the number of unique date–time–site entries (*i.e.* the number of observations) referenced in the cell. This is completed for each season of the regulatory year (Early, Peak, Late). By this method, we tally the total observations at each site for the regulatory year.

SOP 3.2.2 – NPSO Quality Control

The digital matrix is used in conjunction with the master datasets to ensure no data are missing (*i.e.* everything on the matrix is in the master dataset) and that the matrix is an accurate record of program observations (*i.e.* everything in the master dataset is on the matrix).

The blank digital NPSO datasheets (SOP 2) are slimmed to improve their usability in the field while recording the minimum information required for analysis. First, the raw data are saved to

show that it has been quality controlled ("qcd"): Save As > *RestStop_YYYY_Data_Master_qcd.xlsx*. [At this point in the process, all data are saved in triplicate: backup, raw, and quality-controlled copies.] Several additional fields of data that are unnecessary in the field setting but are required for analyses are added during quality control phases of data management. For each NPSO indicator master:

- Insert a new column: "ObsNum", which provides the tally number of an observation within the set. If there were 10 rest stop observations, ObsNum would range from 1–10.
- Insert a new column: "ObsID", which provides cite information that ObsNum does not. Example results are Tek_1, Toklat_1, etc.
- Insert a new column: "Week", which is the number value of the week (out of 52, starting on Monday). This is to look at temporal trends.
- Insert a new column: "Month", which is the number value of the month (out of 12). This is to look at temporal trends.
- Insert a new column: "WeekDay", which is the text value of the day of week. This is to look at temporal trends.
- Insert a new column: "ObsStartHour", which is the number value of the hour in which the observation began. Some observations span two hour values. Thus, we must declare this value to look at temporal trends.
- Insert a new column: "NonBus", which collapses other vehicle categories together to create a record of non-bus vehicles from an interval.
- Insert a new column: "HourBlock", which is a formula that categorizes observation data into the hour blocks used by the program. The formula reads the time field of a record and assigns either "6–9", "9–12", "12–15", "15–18", or "18–21". Thus, an observation at 6:55am = "6–9". This is to look at temporal trends and cross-reference for data quality.
- Insert a new column: "Season", which is the text value of when the observation occurred defined by VMP seasons. This is to look at temporal trends and cross-reference for data quality.

In a new worksheet, pivot tables are used to check the master datasheet to the values reported in the digital matrix using the following set up:

- Row labels = "Site" (primary), "Season" (secondary)
- Column lables = "HourBlock"
- Values = Count of "Site"

Count of GAP	Column Labels						
Row Labels	6-9	9-12	12-15	15-18	18-22	Grand Total	
21.6	12	14	15	13	10	64	
Early	2	2	1	2	1	8	
Peak	7	7	8	7	4	33	
Late	3	5	6	4	5	23	
37.6	13	17	16	17	10	73	
Early	2	4	2	2	2	12	
Peak	7	9	7	7	4	34	
Late	4	4	7	8	4	27	
52.8	12	15	17	13	11	68	
Early	2	2	3	2	1	10	
Peak	7	8	8	7	6	36	
Late	3	5	6	4	4	22	
60.6	13	15	16	13	9	66	
Early	1	2	3	2	1	9	
Peak	8	8	7	7	4	34	
Late	4	5	6	4	4	23	
68.5	11	13	13	13	9	59	
Early		1	1	1		3	
Peak	8	7	7	7	6	35	
Late	3	5	5	5	3	21	
Grand Total	61	74	77	69	49	330	

Figure 6. A pivot table can act as a quick mathematical check to ensure all data are included in the master dataset and that none are duplicative.

This should reveal the number of observations collected at a specific site (e.g. Toklat rest stop) during a specific season (e.g. peak) during a specific hour block (e.g. 9–12). The value should match the digital matrix. When and only when, discrepancies are rectified, analysis will begin. Use this pivot table to guide the search for blanks or errors in the data.

SOP 3.2.3 – ROAR Quality Control

In the ROAR file geodatabase in ArcGIS, open the attribute tables for every Feature Class (WStop, WNoStop, RStop, OStop, HStop, BStop, and Parked). Do the following in each attribute table:

1. Find blank Unique IDs and fill them in.
2. Make sure all Unique IDs are in the correct format (iPad#_MMDDHH).
3. Thoroughly check each table for duplicate observations. Delete the duplicates.
4. Inspect fields for omissions (–1) or invalid entries (<NULL>). Use the comment fields to fill in blanks if you can.
5. Add another column and give the data a QC rating as you go.
 - a. Great – no omitted fields
 - b. Good – one or two fields omitted (such as animal count, side of road, POV permit type) but no critical fields omitted
 - c. Poor – a critical field missing (such as animal) but has all other information OR three omitted fields
 - d. Very Poor – more than three omitted fields

- e. Delete – completely blank data points
6. To translate each feature's latitude and longitude into road mile, linearly reference all ROAR data to the Park Road using the Locate Features Along Routes tool in Linear Referencing Tools in ArcGIS.
7. Export each linearly referenced attribute table from ArcGIS to Excel.
8. For each attribute in the Excel file, the system records values (0-9) instead of attributes (bear, sheep, etc.). Create a VLookup using the season's definition library to define any attributes in columns that need defining (i.e. Observer, Animal, Behavior, etc.).

SOP 3.2.4 – JV Bus Data

The Daily Dispatch Sheets (DDS; Excel .xlsx format) need to be changed to reflect the Daily Dispatch Report (DDR; Adobe .pdf format) that shows actual bus schedule for the day. Create a master spreadsheet that will contain all of the updated sheets for the Regulatory Year here:
T:\ResMgmtRoad_EcologyData\Buses\JV_Bus_Reports\Corrected_DDS_spreadsheets\DDS_YYY Y_Master.xlsx

Edit each tab of the master Excel file to match the DDR .pdf by doing the following:

1. Make sure both Excel and .pdf are for the same date.
2. Edit bus numbers and driver names in the Excel sheet to match the .pdf files.
3. Add any hand written additions made by JV dispatch.
4. Write down notes on buses or drivers you cannot read and check with JV if needed.
5. Highlight bus routes that do not go beyond the Savage Check Station:
 - AM or PM Cabin, Primrose, or WIW Interp
 - V–CN (Village and Canyon)
 - DD (Dog Demos) or CC (Cone Course)
 - SRS – Savage River Shuttle
 - RCL – Riley Creek Loop
 - Cabine Nite or Softball
 - FBX (Fairbanks)
 - Trains (Train Station)
 - DEC SavageThe following routes do go past Savage:
 - Igloo Spare (sits near Igloo Cabin and used as a rescue bus)
 - Disco (Discovery Hike Bus – goes as far as Eielson)
 - MSLC 100, 200, etc (goes to Tek)
 - O/W or O/N (overnight buses going to Wonder Lake or Kantishna)

Create Unique Bus Events:

1. Compile a master of the dirty data from the corrected DDR spreadsheets into a worksheet called Dirty Data. Save as:
T:\ResMgmt\Road_Ecology\Data\Buses\JV_Bus_Reports\UniqueBusEvents_YYYY
2. Copy the compiled Dirty Data and paste in the worksheet titled Processed Data, where you will edit the data.
3. Delete the highlighted routes (because they do not go beyond Savage). Ensure all remaining routes do go beyond Savage.
4. Filter the Asset column for and delete all blanks.
5. For any Assets with a suffix letter, delete the suffix.
6. Fix bus numbers with typos. Only experience will help you catch which bus numbers are accurate or typos; unfortunately, we do not have a list.
7. Filter Route, Driver, TimeOut, and TimeIn columns for blanks, and fill in with "unknown". Double check using the DDR .pdf that these are in fact unknown. For all the drivers with initials, change the format to J.Smith (for example) with no spaces.

SOP 3.2.5 – Savage Check Station

Throughout the summer, there is a designated lead for the SCS operations. This person is responsible for staff training, spot-checking data collection throughout the summer, working with emerging issues, and supporting seasonal staff who conduct data entry back at the Denali Visitor Center office.

To verify the data from the SCS Access database:

1. Review each day of the database, comparing paper copy and data entered for both categories (bus and non-bus).
2. Troubleshoot any errors/typos.
3. Correct any knowledge-based errors that might be incorrect on the handwritten data sheet
 - Example: coding an Alaska Geographic bookstore restocking trip under the JV code for blue permits, or having a fire crew go in but the division was written down as Maintenance.
4. Check the verified button once buses is complete for that date.
5. Check the verified button once non-buses is complete for that date.