

Collision Data Collection & Mapping on the Colville Reservation

February 12, 2019

WHY?

- Collecting data from your city/region =
 - Targeted Messaging
 - Locating Hot Spots for Safety Analysis
 - Provides justification in the form of evidence for grant proposals.
- Knowledge + Improved Safety = Lives Saved

The Beginning: Spreadsheets of Data

	Year	Month/D	Season	Week	Day of	Time of Call	Weather Condition	Location	District	Driver or p	Age	Sex	Race	Enrolled or f	License Status	Seated?	Impairment
48	26	2013	8-Jun	Spring	Sat	18:34 PM	Unk	MP 42.5 SR 155	Nespelem	Driver		M	I		Unknown	No	Alcohol
49	27	2013	30-Jul	Summer	Tues	20:41 PM	Unk	MP 1.5 Peter Dan Rd	Nespelem	Driver		F	W		Licensed	Unk	Unk
50	28	2013	1-Sep	Summer	Sun	11:54 AM	Unk	HUD 1115 Lone Pine	Omak	Passenger		F	I		Unknown	N/A	Alcohol
51	29	2013	14-Nov	Fall	Thurs	15:28 PM	Unk	MP 118.3 SR 21	Keller	Driver		M	I		Licensed	Unk	Alcohol
53																	
54	30	2014	22-Feb	Winter	Sat	16:00	overcast, dry	MP 270 SR 97	Omak	Driver		f	w		Unknown	No	No
55	31	2014	22-Apr	Spring	Tues	22:40 PM	Unk	MP 26 Bridge Creek Rd	Inchelium	Passenger		F	I		Driver ID only	No	Drugs: Barbituat meth; Alcohol
56	32	2014	4-Jun	Spring	Wed	17:35 PM	Clear	MP 42.4 SR 155	Nespelem	Driver		M	I		Driver licensed	No	Alcohol
57																	
58	33	2015	4-Mar	Winter	Wed	12:55 PM	Clear	MP 2.5 Gold Lake Rd	Nespelem	Driver		M	I		Suspended 3rd	No	Alcohol
59	34	2015	10-Mar	Winter	Tues	14:11	Clear, dry	MP 33 Hall Creek	Inchelium	Passenger		M	I		Driver suspended 3	No	Alcohol
62	35	2015	16-May	Spring	Sat	8:43	Clear	MP 60 SR 155	Omak	Driver		M	I		Driver reinstated	N/A	no
63																	
64	36	2016	23-Jan	Winter	Sat	3:05 AM	overcast, ice on road	Bridge Creek & Silver Creek Rd	Inchelium	Passenger		F	I		Licensed	No	Alcohol
67	37	2016	27-Apr	Spring	Wed	12:00	overcast, dry	Twin Lakes Access Rd	Inchelium	Driver		M	I		Licensed	No	No
68	38	2016	8-May	Spring	Sun	15:16		MP 55 SR 155	Nespelem	Driver		M	W		Licensed, Intermed	No	No
69	39	2016	17-Jun	Summer	Fri	23:39	overcast, dry	4341 SR 155	Nespelem	Driver		M	I		Licensed	No	Alcohol
70	40	2016	17-Jun	Summer	Fri	23:39	overcast, dry	4341 SR 155	Nespelem	Passenger		M	I		N/A	No	Alcohol
71	41	2016	28-Oct	Fall	Fri	12:45 PM	overcast, wet	MP 14.98 Inchelium Hwy	Inchelium	Driver		M	I		Suspended 3rd	No	Yes
75	42	2016	20-Dec	Winter	Tues	11:23 AM	Snow, slush, foggy	MP 13.4 Cache Ck Rd	Nespelem	Driver		F	I		Licensed	No	No
76																	
77	43	2017	16-Mar	Winter	Thurs	13:37	clear, dry	MP 287.9 SR 97	Omak	Driver		m	W		Unknown	Yes	No
78	44	2017	16-Mar	Winter	Thurs	13:37	clear, dry	MP 287.9 SR 97	Omak	Passenger		f	W		Unknown	Yes	No
79	45	2017	6-Jul	Summer	Thurs	11:00 AM		Omak Mtn Lookout Rd	Omak	Driver		M	I		Unknown	No	No
80	47	2017	29-Jul	Summer	Sat	0:30	Unk	MP 47 SR 155	Nespelem	Driver		M	I		Licensed	No	Unk
82																	
83	48	2018	15-Feb	Winter	Thurs	6:19	Clear, Dry	MP 43.3 SR 155	Nespelem	Driver		F	I		Unknown	No	Yes
84	49	2018	6-Apr	Spring	Fri	15:54	Unk	MP .9 Omak-Cameron Lk Cut-off Rd	Omak	Driver		M	W		Licensed	Unknown	Unk
85	50	2018	25-Jul	Summer	Wed	3:38	Unk	3578 SR 155	Nespelem	Driver		M	I		Unknown	N/A	Unk
86	51	2018	21-Nov	Fall	Wed	20:31		MP 60.73 SR 155	Omak	Driver		M			Licensed	Yes	No
87																	

25 categories of information that can be used for varying types of analysis

The 25 Categories we use for our data collection

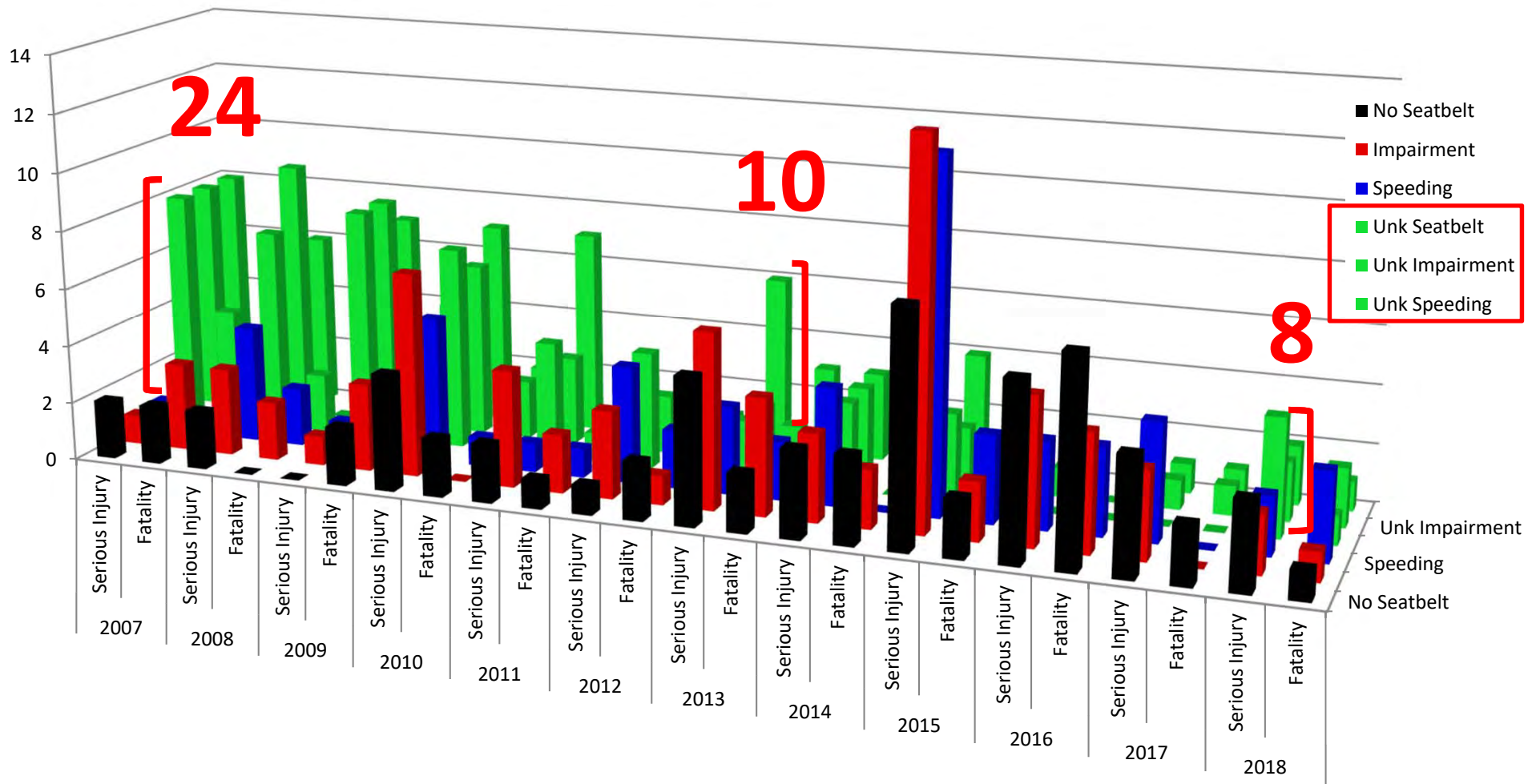
We pull this information from Spillman and/or the collision form filled out by the officer.

1. Year of the Incident
2. Month and Day
3. Season
4. Day of the Week
5. Time of the call
6. Weather Conditions
7. Location
8. Road Type (State, Tribal, City, etc)
9. District (We have 4 Districts)
10. Name (to be redacted)
11. Driver/Passenger/Pedestrian/Bicyclist
12. Age
13. Sex
14. Race
15. Enrolled/Descendant/No/Non-Native
16. License Status
17. Seatbelt
18. Impairment
19. Speeding
20. Cause
21. Vehicle Type
22. Number of People Involved
23. Collision Type
24. Injury sustained
25. Case Number

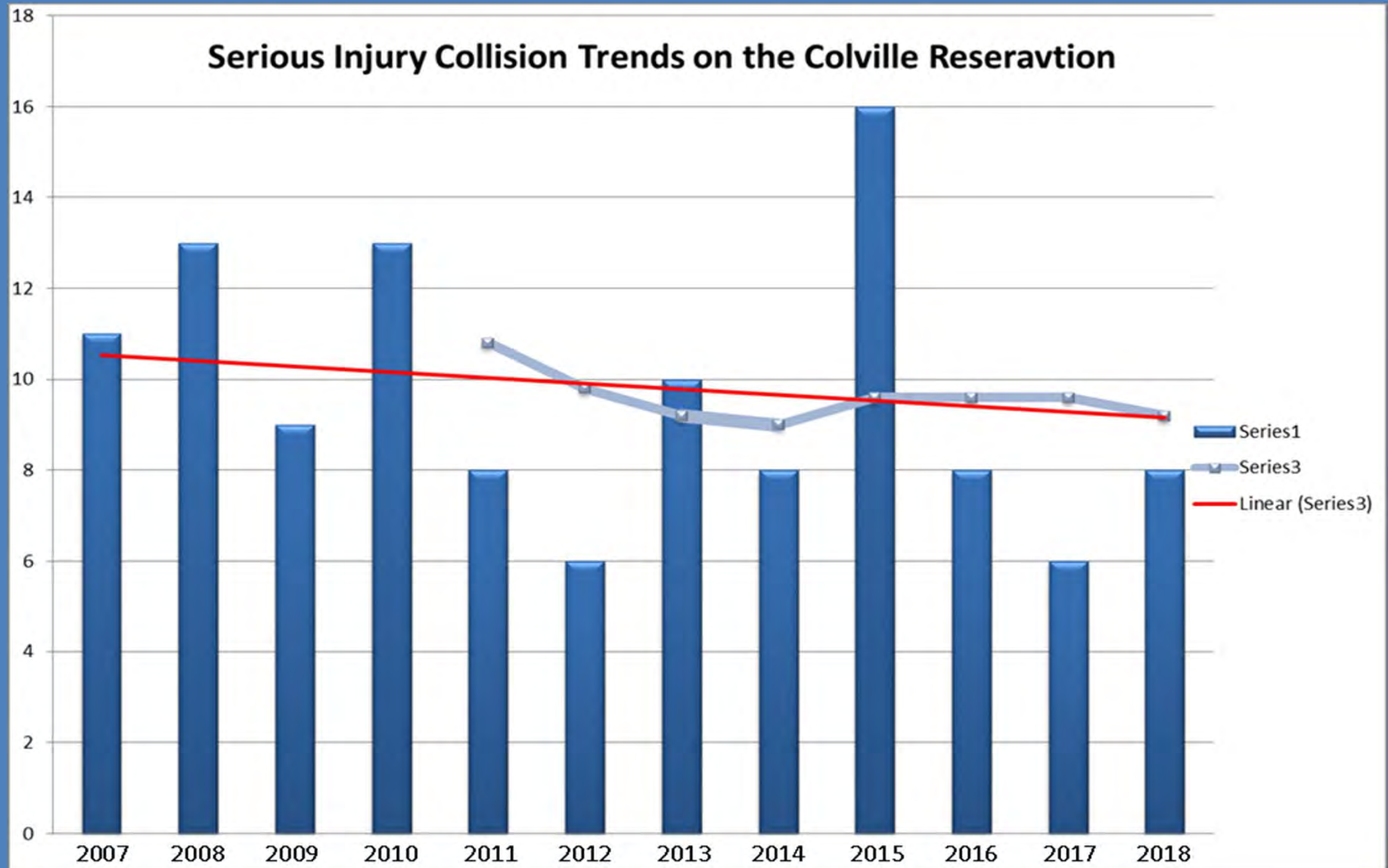
*It is very important that collision forms filled out by officers are complete!

Identifying Collision Reporting Gaps

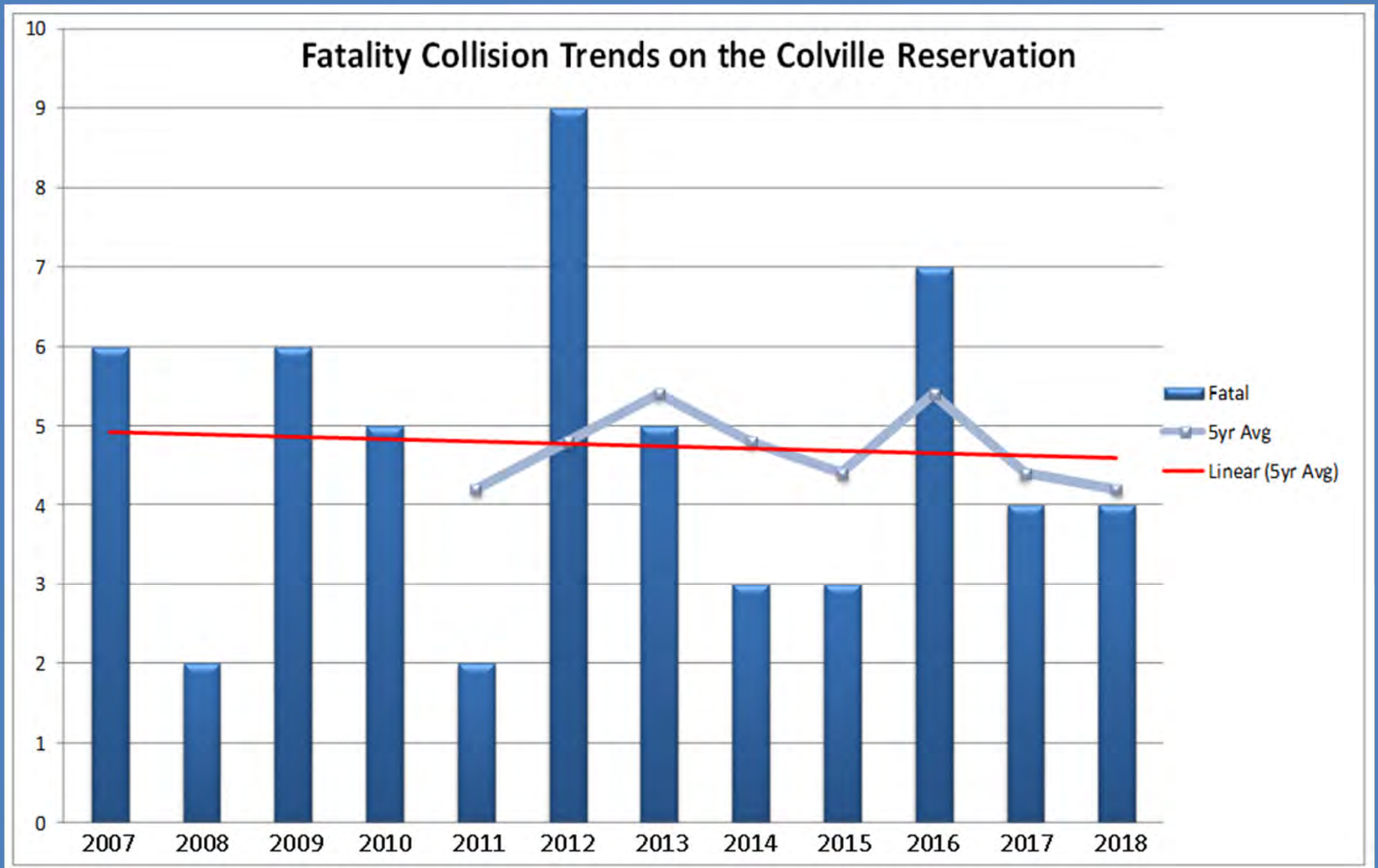
Since 2007, we have seen an increase in documentation of Seatbelt use/Impairment/Speeding, which has led to a decrease in data gaps.



Serious Injury Trends 2007-2018

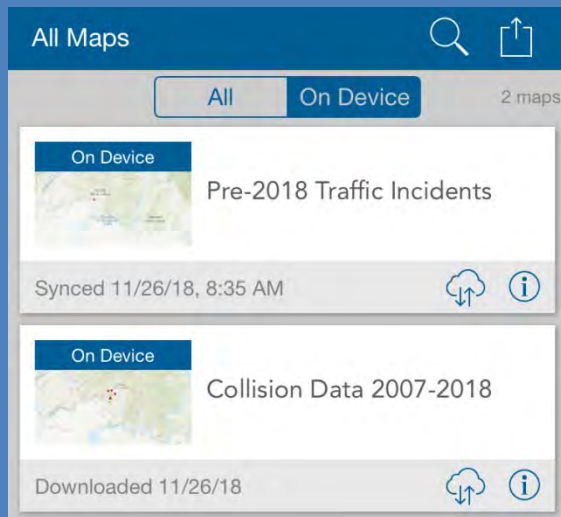


Fatality Trends 2007-2018

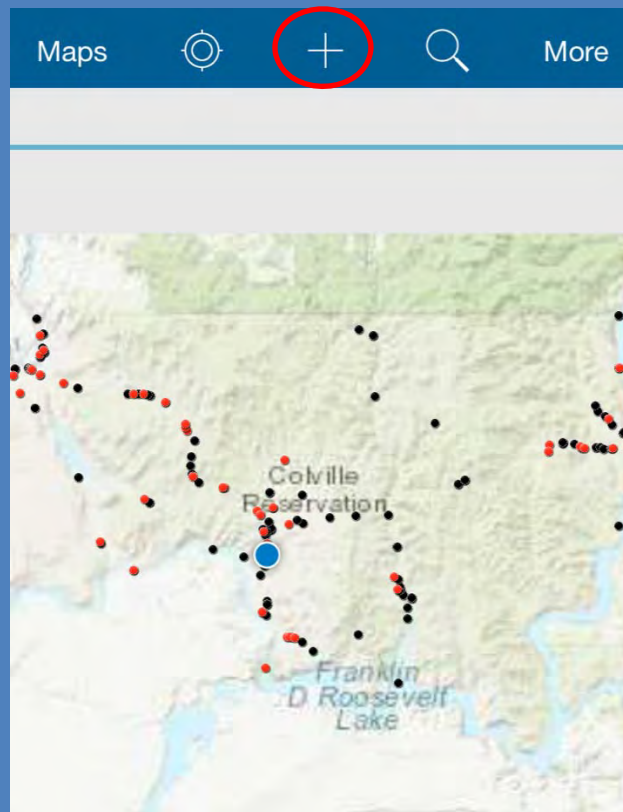


Collecting Data with ArcGIS using Esri Collector

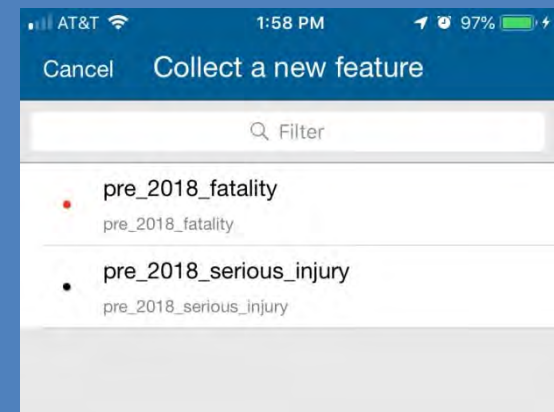
1. Maps available on your device



2. The “+” allows you to add data



3. Choose the data you are wanting to enter



ArcGIS Esri Collector

AT&T 1:58 PM 97%

Cancel [Settings] [Map] [Camera] Submit

Location
Acquiring location 213.3 ft

Year >

Date >

Season >

Day >

Time >

Location >

District >

Inj_Per >

Gender >

Enrolled >

Lic_Status >

Seatbelt >

Cancel Done

Inj_Per

Filter

<No value> ✓

Driver

Passenger

Pedestrian

Other

Bicyclist

Cancel Done

Seatbelt

Filter

<No value> ✓

Yes

No

Unknown

N/A



Creating a filter to include only specific information on the map

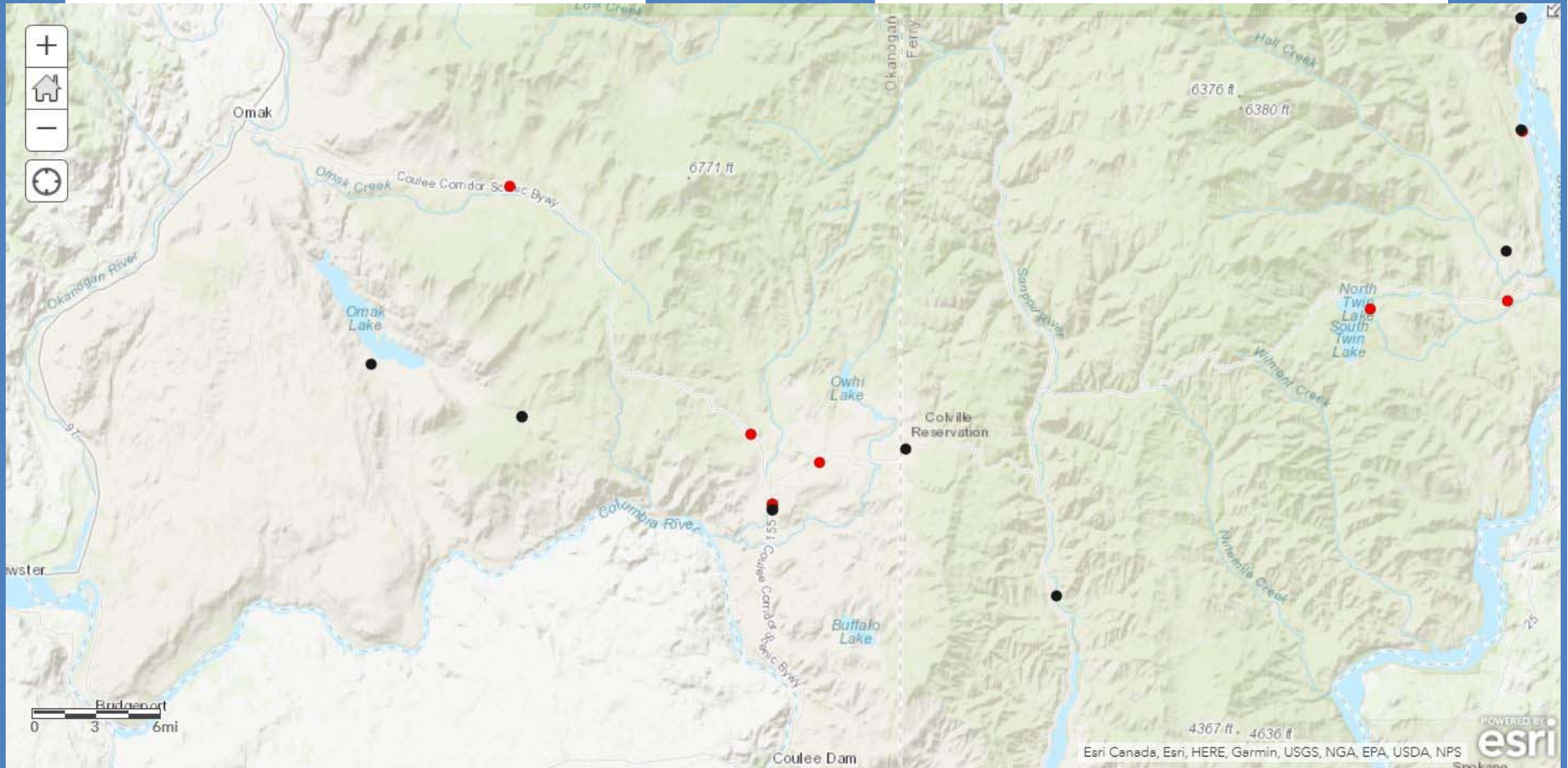
You can filter information by any of the categories you have included.

The screenshot shows the ArcGIS Online interface for a map titled "Collision Data 2007-2018". A filter dialog box is open, titled "Filter: pre_2019_serious_injury". The dialog contains a "Create" button and options to "Add another expression" and "Add a set". Below these, it says "Display features in the layer that match the following expression". A dropdown menu is open over the "Year" field, showing a list of categories: Year, Location, OBJECTID, Season, Seatbelt, Speeding, and Time. The "Year" field is currently set to "is" and "2016". The "Value" radio button is selected. At the bottom of the dialog are three buttons: "APPLY FILTER", "APPLY FILTER AND ZOOM TO", and "CLOSE". The background shows a map with several black dots representing collision data points. The map includes a scale bar (0 to 6 miles) and a north arrow. The footer contains links for Esri.com, ArcGIS Marketplace, Help, Terms of Use, Privacy, Contact Esri, Report Abuse, and Contact Us.

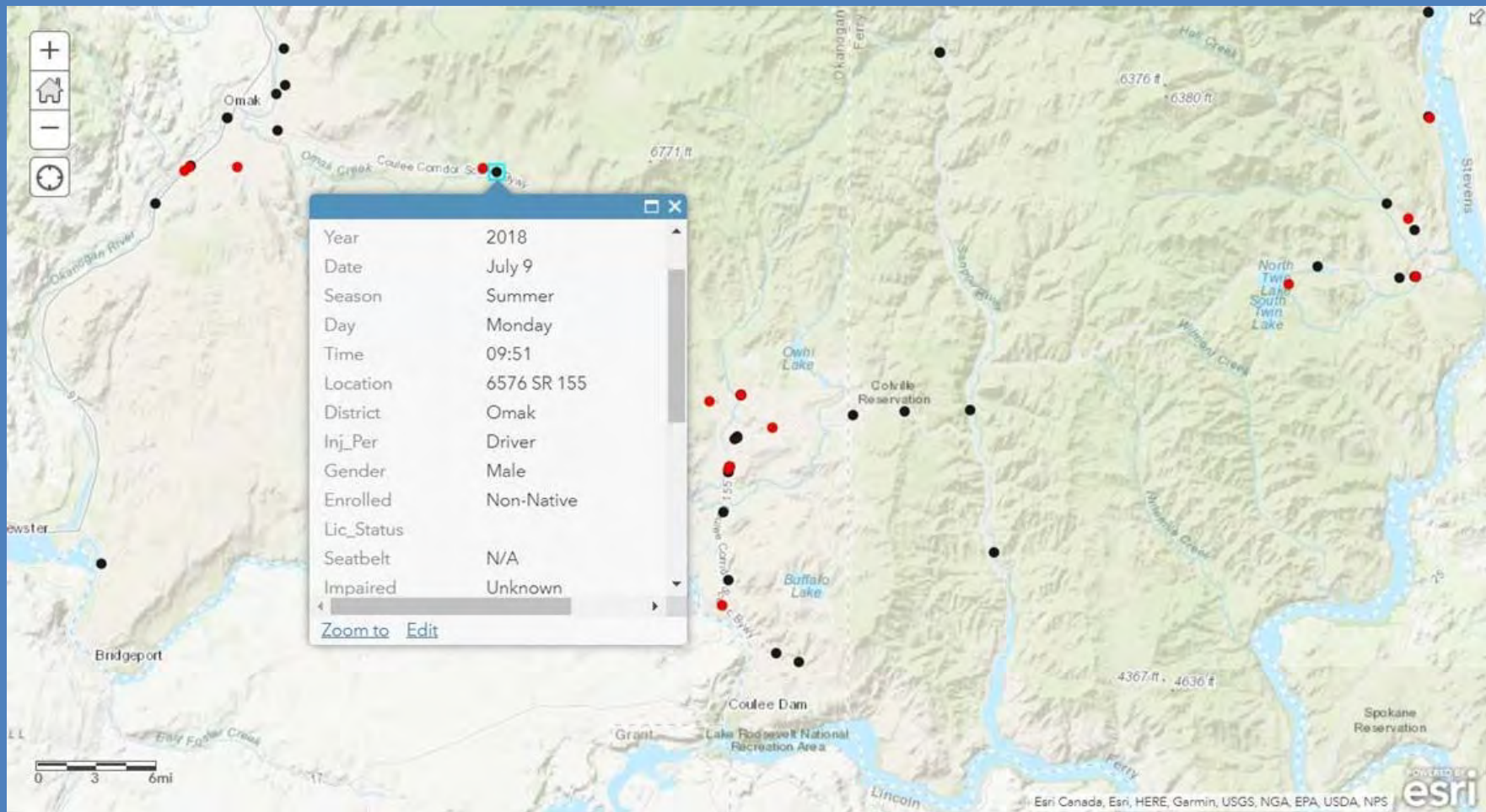
Creating Filters using ArcGIS

Filter: pre_2019_serious_injury

Filter: pre_2019_fatality



ArcGIS Esri Collector Finished Product



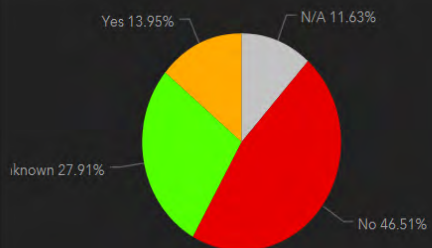
Public Interface

This allows members of the public to stay informed of the location, severity and frequency of collisions, as well as the percentages of risky behaviors associated with the collisions. The dashboard is automatically updated when data is entered into ArcGIS.

Serious Injury Collisions 2015-2018

43

Last update: a few seconds ago



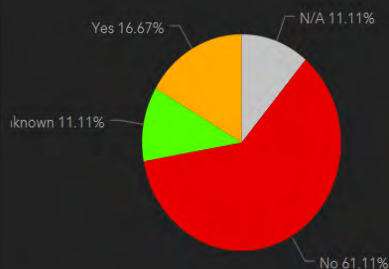
Last update: a few seconds ago

Seat belt Use Impairment Speeding

Fatality Collisions 2015-2018

18

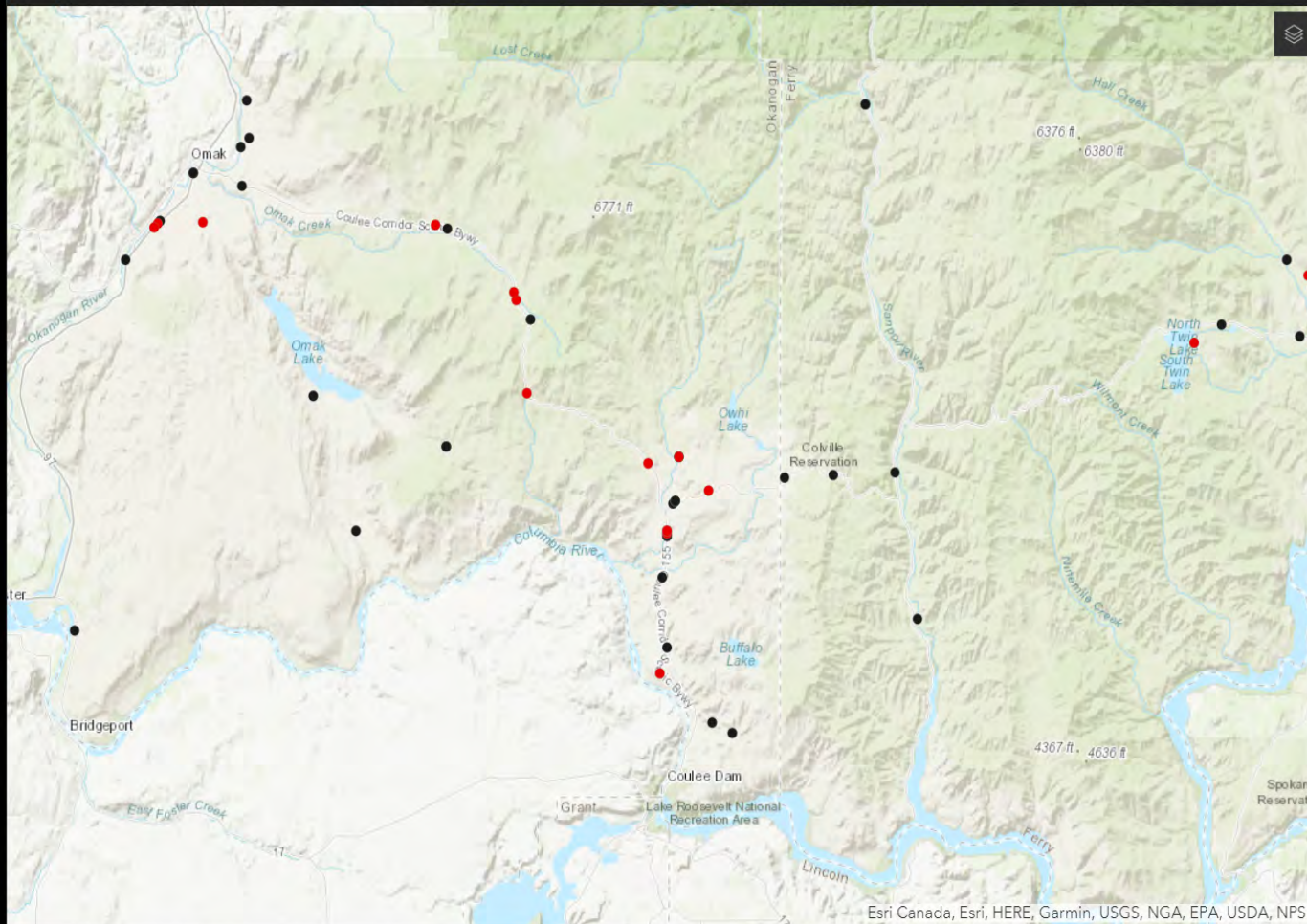
Last update: a few seconds ago



Last update: a few seconds ago

Seat belt Use Impairment Speeding

Collision Data for the Colville Reservation 2015-2018



Esri Canada, Esri, HERE, Garmin, USGS, NGA, EPA, USDA, NPS