



REVIEW MEMORANDUM

To: Paul Randall-Grutter, PE – County Engineer, Skagit County Public Works
From: Matthew Palmer, PE *MJP*
Subject: Traffic Study Review
Project: Grip Road Gravel Pit, GTC #17-161
Date: December 18, 2018

This review memorandum is a review of the DN Traffic Consultants memorandums dated February 8, 2016 (Comments Below) and dated November 30, 2016 (No Comments) for the proposed Grip Road Gravel Pit.

February 8, 2016 Memo

1. How realistic is it that 100% of the trucks accessing the gravel pit will be dump truck plus trailer? In previous analysis of gravel pits conducted by GTC a ratio of 70% truck/trailer and 30% single truck have been utilized.
 - a. If 100% truck and trailer cannot be guaranteed, please document the impacts of the anticipated truck mix.
2. Counts were collected in 2013 as we are entering 2019.
 - a. Provide data showing that the 2013 counts are still valid or provide new counts.
3. What are anticipated to be the true operating hours of the pit? If the pit is operational only until 3 PM, a new count should be conducted from 3-6 PM to make sure to capture the possible end peak of the pit. Otherwise, explain that this would be the worst case-scenario and that the time in which the gravel pit will be putting trucks onto the road will have a lower amount of traffic.
 - a. Clarify the operating hours of the pit and how that relates to impacts on the roadway.
4. What is the life expectancy of the pit with 200,000 tons of gravel removed annually?
5. The insufficient sight distance is called out in the report, but it is not addressed as to how this will be fixed, particularly for the access. Additionally, the sight distance for the Grip Road/Site Access appear to be flipped for Eastbound/Westbound. It appears Westbound has less sight distance than eastbound based on observations.
 - a. The intersection and access point are existing today, so please provide a plan/profile showing the available sight distance at the access to Grip Road and possible mitigation that could be done to remedy the entering sight distance.
 - b. Provide sight distance calculations for trucks as well, based on AASHTO guidelines.
 - c. Provide a collision history to determine if sight distance limitations are causing crashes.

6. The mitigation of a truck activated flashing beacon north of Grip Road on Prairie Road for southbound traffic seems appropriate.
 - a. The detector should activate the flashing beacon for the following scenarios:
 - i. Westbound trucks on Grip Road approaching Prairie Road
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DN TRAFFIC CONSULTANTS

PO Box 547
Preston, WA
98050-0547
425-765-5721

P 216-0097
RECEIVED

MAR 07 2016
SKAGIT COUNTY
PDS

Date: February 8, 2016

To: Dan Cox
Concrete Nor'West

John Semrau, P.E.
Semrau Engineering and Surveying

From: Gary A. Norris, P.E., P.T.O.E.
DN Traffic Consultants

Subject: Grip Road Gravel Pit
Preliminary Traffic Information

Pursuant to your request, I have conducted preliminary traffic analysis focusing on existing turning movement counts and intersection sight distance at the critical analysis intersections impacted by the proposed Grip Road Gravel Pit operation. The result of the evaluation is discussed in this memo. The initial data collection studies were conducted in July 2013. This memo was subsequently updated with the proposed alternative mitigation commiserate with the impact created by the "proposed action".

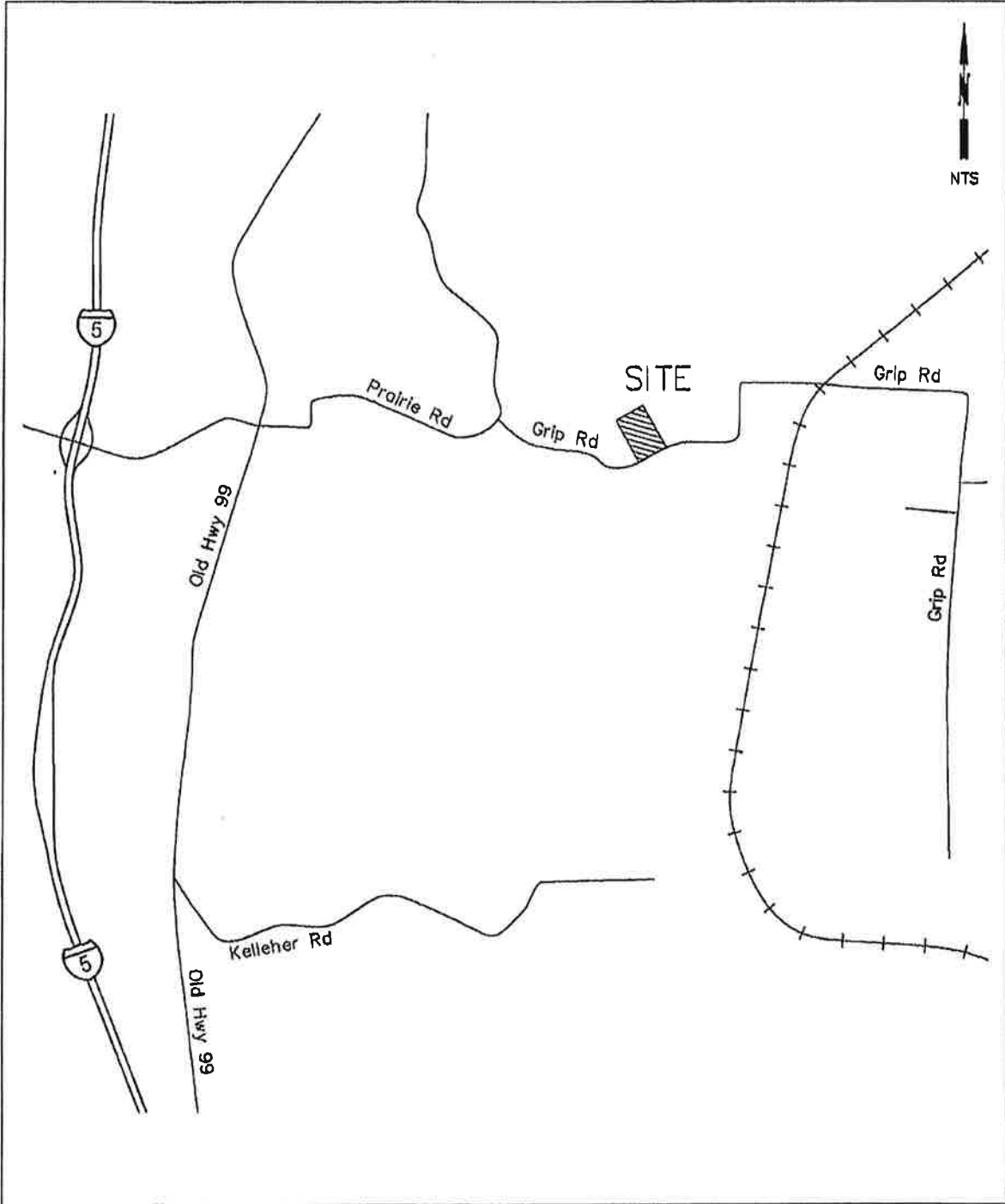
Proposal

The proposed Grip Road gravel pit is located on Grip Road approximately 0.70 miles east of the Prairie Road/Grip Road intersection. A vicinity map is presented in Figure 1.

The current proposal for the operation of the Grip Road gravel pit calls for up to 200,000 tons of gravel to be processed on an annual basis. Assuming each truck (dump truck plus trailer) can haul approximately 34 tons of gravel, the annual truck volume is estimated to be approximately 5,883 trips ($200,000/34 = 5,882.35$) or a round trip volume of 11,765 ($5,882.35 * 2 = 11,764.70$) vehicles per year. Assuming this volume is spread evenly across the 260 working days a year, the resultant daily volume would be approximately 46 vehicles per day ($11,765/260 = 45.25$). If the hauling operation were limited to off peak hours (9 am to 3 pm), the end result would be up to a total of eight (8) vehicles per hour ($46/6 = 7.67$) or four (4) trucks in each direction per hour during off peak times.

Traffic Counts

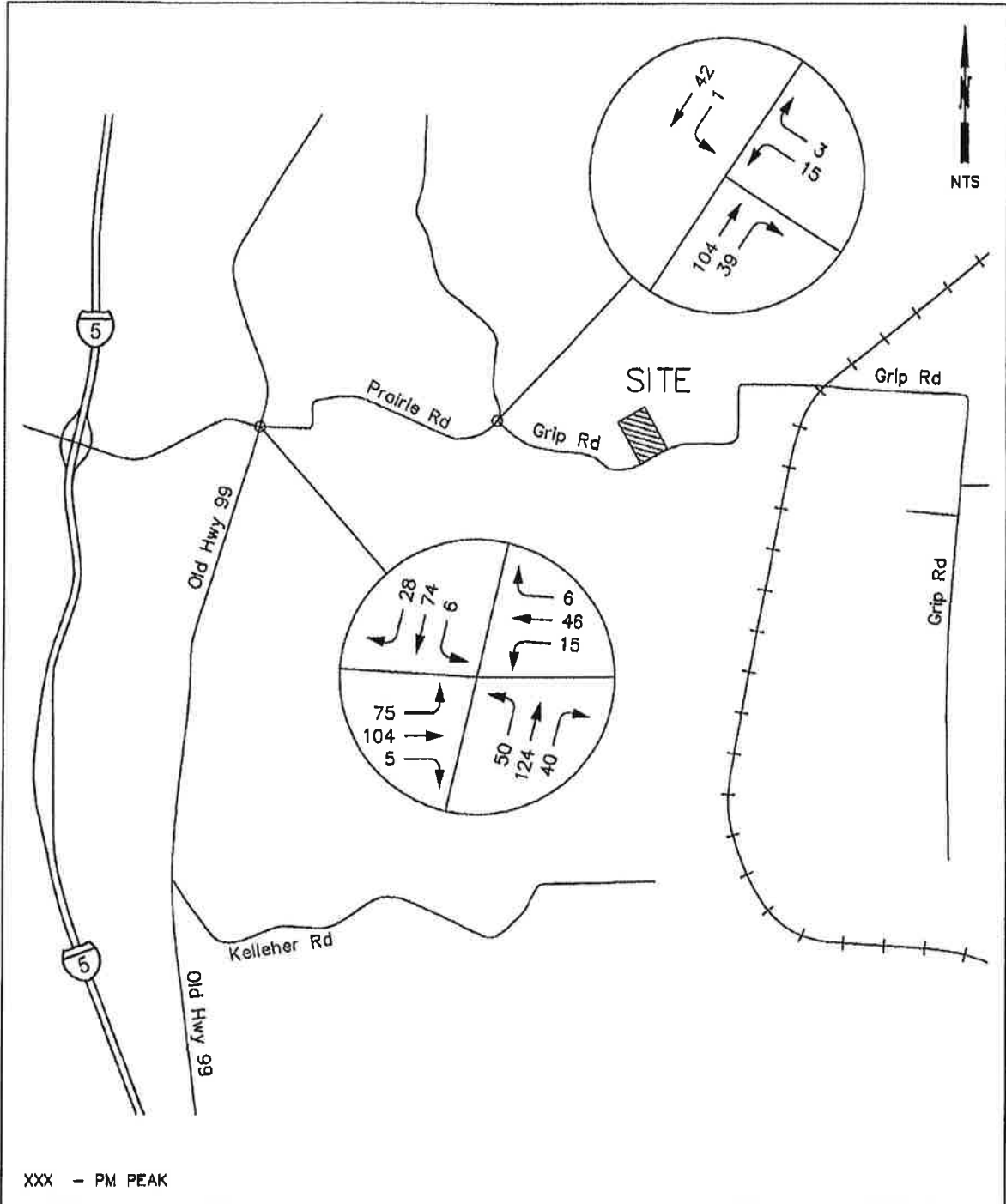
PM peak hour turning movement traffic counts were taken at the intersection of Prairie Road/Grip Road and Prairie Road/Old Highway 99 during the PM peak period (4:00 PM – 6:00 PM) in the month of July 2013. The results of the turning movement counts are presented in Figure 2. The peak hour at each location was determined to be 4:45 PM to 5:45 PM.



DN TRAFFIC
CONSULTANTS

VICINITY MAP
FIGURE 1

CONCRETE
NORTHWEST



DN TRAFFIC
CONSULTANTS

2013 PM PEAK
FIGURE 2

CONCRETE
NORTHWEST

Level of Service Analysis

A level of service analysis at the Old Highway 99/Prairie Road intersection and the Prairie Road/Grip Road intersection was conducted using Synchro 7.0. *Skagit County Road Standards, 2000* indicate the acceptable level of service is LOS C. The result of the level of service analysis is presented in Table 1.

Table 1. Existing Level of Service

Intersection	Traffic Control	Level of Service
Old Highway 99/Prairie Road	EB/WB Stop	C (17.2)
Prairie Road/Grip Road	WB Stop	A (9.4)

WB – westbound

EB – eastbound

(xx.x) – seconds of delay

As shown in Table 1, the two primary intersections impacted by the proposed gravel pit operate at an acceptable level of service in accordance with Skagit County Road Standards.

Intersection Sight Distance

Sight distance was analyzed at the Prairie Road/Grip Road intersection and the site access intersection with Grip Road. The result of the sight distance analysis is presented in Table 2.

Table 2. Intersection Sight Distance

Intersection	Direction	Stopping Sight Distance ¹		Entering Sight Distance ¹	
		Observed	Required ²	Observed	Required ²
Prairie Road/Grip Road	Northbound	342	305	489	445
	Southbound	162	305	202	445
Grip Road/Site Access	Eastbound	401	305	419	445
	Westbound	533	305	523	445

1) Measured in feet

2) Source: AASHTO based on 40 mph posted speed.

As shown in Table 2, the analysis intersections have sight distance values below current standards. The Prairie Road/Grip Road intersection has sub-standard observed distances for both the stopping and entering sight distance in the southbound direction whereas the Grip Road/Site Access has a sub-standard value for entering sight distance in the eastbound direction. Of specific concern are the values for the Prairie Road/Grip Road intersection in the southbound direction.

Alternative Mitigation

Possible mitigation for the adverse sight distance at the Prairie Road/Grip Road intersection include the following:

- Re-grading the west side shoulder north of the intersection to provide adequate sight distance through the curve; or
- Widening Prairie Road north of the intersection to provide a southbound left turn lane for southbound Prairie Road traffic turning onto Grip Road and a west bound acceleration lane for traffic turning left from Grip Road.

These two options would be an ultimate fix to the sight distance deficiency at the Prairie Road/Grip Road intersection which Skagit County should consider as development occurs in this

area. Obviously, the cost of either option would be beyond what would be commiserate with the mitigation required to address the traffic impact created by of the Grip Road Gravel Pit operation.

Because of the cost of the foregoing alternatives, other low cost mitigation measures should be considered to provide safe operation for the gravel dump trucks using this intersection. Low cost mitigation measures to improve safety and efficient traffic operations could include the following:

- A temporary pro-active solution to the sight distance constraint could include operating the intersection under Flagger control when gravel trucks are exiting (westbound) Grip Road. Under this approach, a Flagger (card carrying) would be stationed on the north leg of the intersection, where adequate stopping sight distance (SSD) exists, to control traffic approaching the intersection from the north when trucks are entering Prairie Road from Grip Road. The Flagger would be supplemented with a "Spotter" stationed at the intersection who would direct truck traffic to proceed after notice from the Flagger that oncoming traffic was stopped. Of course, this operation would be supported with appropriate advance signing notifying drivers of the flagging operation. Signing would be removed or covered when there was no active hauling.

Assuming 46 truck trips per day with 23 westbound on Grip Road, it is estimated one (1) Flagger and one (1) Spotter would be required for six (6) hours per day. The cost of this operation would be approximately \$126,000 per year (Labor Cost = 260 days * 6 hours per day * 2 flaggers per day * \$40.00 per hour = 124,800 = Signing Cost = \$1,200.).

- A second low-cost option would be to install advance warning signs with flashing beacons on the north leg of the intersection. The flashing beacons could be designed to operate only when traffic westbound on Grip Road approaches the intersection. The flasher could be activated by a roadway detector located on Grip Road. The estimated cost of this solution would be approximately \$25,000.

The above alternatives to intersection reconstruction are only offered as potential interim solutions until the County has sufficient funds to improve the sight distance at this location or the gravel pit operation justifies the cost of the necessary road improvements.

It is expected that additional traffic analysis will be required as the proposed gravel pit operation is defined.

If you have any questions, please give me a call at (425)765-5721.

Thanks,
Gary

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SEP 17 2018

SKAGIT COUNTY
WA

Memorandum

To: Dan Cox
Concrete Nor' West

From: Gary Norris, PE, PTOE
DN Traffic Consultants

Date: November 30, 2016

Subject: Grip Road Gravel Pit

Re: Maximum Daily Truck Traffic



Summary

The following memorandum was prepared in response to your request to document the basis for the estimated maximum truck volume to be generated by the proposed Grip Goad Gravel Pit.

The traffic impact analysis prepared for the gravel pit operation assumed 200,000 tons of gravel would be processed from the pit on an annual basis. From this assumption, it was estimated that 5,883 trucks per year, or 11,765 round trips of gravel hauling trucks would be required to haul this volume. Limiting hauling times to off peak hours, or six hours per day, for 260 working days per year results in 46 trips per day or 8 vehicles per hour. The TIA used a volume of eight (8) trucks per hour as an average volume during the off-peak hours of 9 AM to 3 PM.

The County Planning staff desired to establish a maximum hourly restriction for gravel trucks serving the Grip Road pit. From the roadway standpoint, the limiting factor would be the volume of trucks during the peak hour that an intersection could serve without exceeding the Skagit County Road Standard level

of service of LOS C.¹ As shown in the Traffic Impact Analysis, the current level of service for worst case movement (eastbound) at the Old Highway 99/Prairie Road intersection is LOS C. With the addition of approximately 110 truck trips during the PM peak hour the level of service would drop to LOS D, exceeding the County Road Standard of LOS C.

In our conversation, it was understood there wasn't enough dump trucks with pups in Skagit County to provide this volume of truck traffic for the pit operation. A more realistic number was determined to be 30 trucks or 60 trips per hour.

Therefore, the suggested maximum limit based on the availability of 30 dump trucks was determined to be 60 truck trips per hour, or 720 truck trips per day.

If you have any questions, please let me know.

Thanks

Gary

¹ Skagit County Road Standards, Version 5.2, May 26, 2000

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MEMORANDUM

TO: Mike Janicki
 Dan Cox
FROM: Jordan M. Janicki, PE, SE
DATE: April 13, 2017
RE: Janicki Logging 40ftx14x Bridge Load Rating
 Location: Off Grip Road, Sedro-Woolley, WA



The Davido Consulting Group has analyzed the load rating capacity of the main structural members of the Janicki Logging Bridge located off the Grip Road in Sedro-Woolley, based on the photos and descriptions from Mike Norris. W36x184 were used in the analysis for the girders and W12x40's was assumed for the cross purlins based on Janicki Logging drawings from 2/18/99. Based on the analysis the bridge rated for HL-93, and HS-25 loading. The limiting factor in the design is the shear capacity of the concrete decking limiting the rating to HS-25

The main bridge girders and the cross members have a much greater capacity than is required for this loading and have the capability of supporting up to U80 off highway loads. Please contact DCG if a higher load rating is required for a specific load case.



BRIDGE DESIGN VEHICLES				
HS 20-44 - GVW 36 TONS 	8,000 LBS.	16,000 LBS.	16,000 LBS.	16,000 LBS. 16,000 LBS.
	12'-0"	4'-0"	10' TO 26'	4'-0"
HS 30-44 - GVW 54 TONS 	12,000 LBS.	24,000 LBS.	24,000 LBS.	24,000 LBS. 24,000 LBS.
	12'-0"	4'-0"	10' TO 26'	4'-0"
U80 OFF HIGHWAY TRUCK - GVW 80 TONS 	12,000 LBS.	37,000 LBS.	37,000 LBS.	37,000 LBS. 37,000 LBS.
	14'-0"	4'-0"	14' TO 30'	4'-6"

Mount Vernon Office
 2210 Riverside Drive, Suite 110
 Mount Vernon, WA 98273
 Tel 360.899.1110

Lake Forest Park Office
 15029 Bothell Way NE, Suite 600
 Lake Forest Park, WA 98155
 Tel 206.523.0024

Whidbey Island Office
 PO Box 1132
 Freeland, WA 98249
 Tel 360.331.4131

March 16, 2018

John Cooper
Skagit County Planning and Development Services
1800 Continental Place
Mount Vernon, Washington 98273

Re: Comment and information concerning personal safety on the CNW proposed haul route (PL16-0097 & PL16-0098)

Dear Mr. Cooper,

I am sorting through the Skagit County Comprehensive Plan, comments made by Paul Randall-Grutter (County Engineer) in a recent Skagit County traffic accident report published in the Skagit Valley Herald, and County traffic statistics to see how they relate to the CNW proposed haul route (Prairie Road and Grip Road). What I find is troubling.

Here is a quote from the Skagit County Comprehensive Plan 2016-2036 on Page 153, Policy 4D-5.3 (emphasis is mine):

Roads and Bridges: New public roads and bridges accessing designated Mineral Resource Overlay Areas shall be designed to sustain the necessary traffic for mineral extraction operations. Existing roads and bridges shall be improved as needed as each new extraction operation is developed. Cost sharing for the improvement of roads and bridges shall be negotiated between the permitting authorities and the applicant.

Below are details from an accident reported on GoSkagit.com:

A 60-year-old Mount Vernon woman was killed Monday evening in a two-vehicle collision on Farm to Market Road.

The collision occurred at the intersection of Farm to Market and Josh Wilson roads, according to a news release from the State Patrol.

The woman, Karen Wolf, was stopped at a stop sign westbound on Josh Wilson Road, the news release states. Her view was obstructed by other vehicles when she apparently accelerated from the stop sign and was struck by another vehicle, which was traveling northbound on Farm to Market Road.

Both vehicles came to rest in a ditch at the northwest corner of the intersection.

And the quotes from Paul Randall-Grutter as published on 1/31/18 in the Skagit Valley Herald about the above accident report:

Old roads such as Josh Wilson and Farm to Market were not built for the level of traffic they now accommodate ...

He said a four-way stop, as some have requested, would result in more collisions, based on data collected from other intersections.

There's no real funding program to do highway intersection (improvements)," he said. "We have to prioritize projects based on available funding.

Finally, traffic volumes, right of way, pavement width, and FFC classification for Farm to Market Road, Josh Wilson Road, Grip Road, and Prairie Road from Skagit County Roads Traffic Volumes 2016:

Road Name	Location	FFC*	Ave Daily Traffic	ADT Year	Pave Width	Right of Way
FARM TO MARKET ROAD	at JOSH WILSON ROAD	07	1,954	2015	20	60
JOSH WILSON ROAD	42 ft. West of FARM TO MARKET ROAD	07	1,100	2015	22	50
GRIP ROAD	at PRAIRIE ROAD	08	572	2014	20	40
PRAIRIE ROAD	at F & S GRADE ROAD	08	1,945	2015	20	60
PRAIRIE ROAD	0.38 mi. NE of GRIP ROAD	08	1,466	2015	20	60
PRAIRIE ROAD	at OLD HWY 99 NORTH	07	2,406	2015	20	60

*08 = Minor Collector, 07 = Major Collector

1. The County Comprehensive Plan states *“existing roads and bridges shall be improved as needed as each new extraction operation is developed.”* To date, CNW completed a preliminary traffic evaluation of two intersections on the proposed haul route and is attempting to pass the preliminary evaluation off as complete and approved. CNW has not been required to complete any additional traffic studies and Skagit County is considering a limited third-party review of the proposed haul route.
2. The Skagit County Comprehensive Plan states *“Cost sharing for the improvement of roads and bridges shall be negotiated between the permitting authorities and the applicant.”* The only mitigation proposed is a warning light at the intersection of Grip Road and Prairie Road. CNW is responsible for this mitigation. Per DN Traffic Consultants report provided by CNW, the proposed mitigation was only provided as a *“potential interim solution”*. I assume any other future mitigation required because of the new gravel pit will be Skagit County’s responsibility. And per Paul Randall-Grutter, *“There’s no real funding program to do highway intersection (improvements),”* he said. *“We have to prioritize projects based on available funding.”* We know, which I have documented extensively in previous letters, much more mitigation should be required before allowing dump trucks to run 24/7 on Prairie Road and Grip Road.
3. The accident at Farm to Market Road and Josh Wilson Road is a real live example of growth without accounting for infrastructure improvements. County comprehensive plans are written to try to tie growth with infrastructure improvements. Currently, Skagit County and CNW are trying bypass these requirements.
4. The statistics on the proposed haul route look eerily similar to the statistics on Farm to Market Road and Josh Wilson Road. A site visit to the roads will confirm the roads are very similar with one exception: Josh Wilson Road and Farm to Market Road are straight, while Prairie Road and Grip Road are not. Based on these similarities, I would say Paul nailed it: Prairie Road and Grip Road are the same as Josh Wilson Road and Farm to Market Road and are *“not built for the level of traffic they now accommodate.”* But now the County wants to allow dozens of additional loaded tandem gravel trucks to run 24/7 on these very same substandard roads?
5. We need a comprehensive third-party review of the proposed haul route and any other potential haul routes (CNW has requested the right to take product straight to market or to other processing locations). The review should compare current engineering standards for the roads to current road conditions. Any areas that do not meet the current standards should be identified and improvements proposed (with cost estimates) to mitigate the deficiencies. Then *“cost sharing for the improvement of roads and bridges shall be*

negotiated between the permitting authorities and the applicant.” If not, as noted by the County, we do not have a real funding mechanism to make necessary improvements.

In conclusion, Skagit County and Concrete Nor'West need to thoroughly evaluate the proposed and potential haul routes, identify mitigations required, negotiate the financial responsibilities, and complete the mitigations. It is what is required by Skagit County code. We have real life examples of what happens when we do not upgrade infrastructure to accommodate growth. Let's not keep making the same deadly mistakes.

Brian Bowser
21110 Parson Creek Road
Sedro Woolley, WA 98284

Link to Skagit County Comprehensive Plan 2016-2036

<https://www.skagitcounty.net/PlanningAndPermit/Documents/CompPlan2016/CP2016%20Public%20Comment%20Draft%2006-09-2016%20tracked.pdf>

Link to article published at www.goskagit.com on 1/16/18

https://www.goskagit.com/news/local_news/mount-vernon-woman-killed-in-car-crash/article_68929fb1-39a2-53ac-954c-1673c24043bc.html

Link to article published in the Skagit Valley Herald on 1/31/18

https://www.goskagit.com/news/local_news/fatal-collision-spurs-search-for-solutions/article_852e04a4-f7aa-5859-9e26-fea6a20cb419.html

Cc: Hal Hart
John Sitkin

Via Email

paulrg@co.skagit.wa.us; pw@co.skagit.wa.us; johnC@co.Skagit.wa.us; julien@co.skagit.wa.us, jsitkin@Chmelik.com, ndavidson@chmelik.com

January 7, 2018

Paul Randall-Grutter
Public Works Department
1800 Continental Place
Mount Vernon, WA 98273

Re: Comment and information concerning personal services contract with Gibson Traffic Consultants (PL16-0097 & PL16-0098)

Dear Mr. Randall-Grutter,

I have become aware that Public Works has engaged Gibson Traffic Consultants to review traffic safety along the proposed haul route for Concrete Nor'West's proposed gravel mine off of Grip Road. While I very much agree with the need for a third party review, I don't understand why the County is proceeding with it at this time, since the data provided by CNW are out of date, and the status of their application is in question. Nevertheless, because of my involvement/familiarity with traffic safety on the proposed haul route, if the County is to proceed with this contract at this time, I have important comments and questions regarding the scope of work, which I urge you to consider.

I have reviewed the consultants' work scope. For convenience I broke the scope into line items below, and added comments and questions regarding specific items. I urge you to consider these comments, to clarify the scope of work to be more specific, and to better address the community's concerns.

I have also attached documents I generated that I believe are very pertinent to Gibson's work scope. These documents consolidate many of my past comments, and have a heavy overlap with comments made by many others in our community.

Please ensure that this letter and the attachments are conveyed to Gibson Traffic Consultants as soon as possible.

Per Gibson Traffic Consultants Contract	Scope Comments
1) Determine if county roads and bridges are capable of the volumes proposed.	<ul style="list-style-type: none">• Gibson should review the haul route road condition vs. current engineering standards.<ul style="list-style-type: none">○ For Grip Road compare the current, as-is condition vs the <u>Rural Major & Minor Collector Roadway Section ADT 401-2000 Figure B-6</u> from the Skagit County Road Standards○ For Prairie Road compare the current, as-is conditions vs <u>Rural Major & Minor Collector</u>

	<p><u>Roadway Section ADT Over 2000 Figure B-7</u> from the Skagit County Road Standards</p> <ul style="list-style-type: none"> • After reviewing road conditions, a gap analysis of existing conditions vs current design standard along with proposed mitigation should be generated. • The impact of 25 years of dump truck and trailer traffic on the entire haul route and bridges on the haul route should be evaluated. • Proposed peak truck volumes from CNW should be used for evaluations rather than the average volumes. • Weather impacts should be reviewed for possible haul restrictions (Water over roadway; freeze / thaw cycles; compact snow/ice)
2) Determine if the operations meet LOS	<ul style="list-style-type: none"> • Does this include turning movements/ operational accommodation? • Considerations for acceleration of dump truck and pups vs cars?
3) Determine if the operations meets safety standards	<ul style="list-style-type: none"> • Covered by item 4.
4) Determine if the operations meets the standards per the Skagit County Road Standards, the Skagit County Transportations Systems Plan, the Skagit County Comprehensive Plan, and any other applicable State and Local Regulations	<ul style="list-style-type: none"> • What is Skagit County’s standard on operational accommodation (the interference with other traffic when trucks are turning)? • Site Distance Issues: <ul style="list-style-type: none"> ○ The stopping and entering sight distance values used in the preliminary traffic analysis by DN Traffic Consultants used the AASHTO guidelines for passenger cars only. The stopping and entering sight distance values for combination trucks is significantly greater. ○ Sight distance at intersections was not reviewed for all intersections on the haul route. Most intersections along the route do not meet standards. This discrepancy should be reviewed. ○ Skagit County has no plans to resolve the sight distance issues at the Grip Road and Prairie Road intersection. The flashing beacon serves as a warning, but does not resolve the problem (DN Traffic Consultants identified the flashing beacon as a potential <u>interim</u> solution). ○ Operational accommodation should be considered with site distance issues when reviewing intersections on the haul route. • Gibson should make a statement whether they believe a Level II Traffic Impact Analysis (TIA) is required for this project per County code. • Locations along the haul route where operational

	<p>accommodation is assumed and acceptable should be identified.</p> <ul style="list-style-type: none"> • Impacts to school busses, fire trucks, and other EMS vehicles should be evaluated. • Likely passing zones should be identified and reviewed for safety improvements along with existing passing zone locations. • The clear zone (the total roadside border area, starting at the edge of traveled way, available for safe use by errant vehicles. This area may consist of a shoulder, a recoverable slope, a nonrecoverable slope, and/or a clear run-out area.) along the proposal haul route should be evaluated. • The road network circulation should be reviewed. • Impacts to and accommodations for bicycle and pedestrian traffic should be evaluated.
5) Preliminary site evaluation including site/access and road review.	<ul style="list-style-type: none"> • Is this referring to the gravel road from Grip Road to the pit? If so Gibson should review: <ul style="list-style-type: none"> ○ Evaluate bridge crossing on Swede Creek. ○ Identify improvements required to accommodate proposed truck volume. ○ Address emergency vehicle access. ○ Address wetlands impacted by the haul road. • Or is this referring to site accessibility as listed in Skagit County Road Standards? <ul style="list-style-type: none"> ○ Area roadway system ○ Traffic volumes and conditions ○ Existing safety and capacity deficiencies ○ Transit service ○ Pedestrian and bicycle facilities • All the above items should be addressed.
6) Review all existing traffic information related information on county webpage related to this project including citizen comments, applicants traffic studies and traffic reports.	<ul style="list-style-type: none"> • Is Skagit County providing a filtered list to Gibson or is Gibson going to review 100% of the documents without County input?
7) Check trip generation for AM peak, PM Peak, and daily using individual site survey (ie. How many vehicles will be added to the roads.)	<ul style="list-style-type: none"> • Who generates this data? • When was the data generated? • Has CNW provided consistent / accurate information to complete this inquiry?
8) Check trip distribution for AM peak, PM peak, and daily (ie. Where those trips will be going)	<ul style="list-style-type: none"> • Who generates this data? • When was the data generated? • Has CNW provided consistent / accurate information to complete this inquiry?
9) Trip turning movement assignments	<ul style="list-style-type: none"> • This item should cover every intersection and curve along the proposed haul route.
10) Determine whether traffic from the proposed	<ul style="list-style-type: none"> • Is this different from item 2?

operation meets level of service (LOS) standards.	
11) Evaluate adequacy and validity of the 2013 counts used.	<ul style="list-style-type: none"> Data is now 5 years old. Is the quality of this data typical for a project of this size and impact? DN Traffic Consultants did not include any non-development traffic growth between 2013 and the start of gravel operations. Is this a correct assumption?
12) Access evaluation including sight distance conditions.	<ul style="list-style-type: none"> Sight distance conditions should be evaluated along the entire haul route.
13) Evaluate collision history	<ul style="list-style-type: none"> Is the collision data generated by the Skagit County Sherriff directly? Or from the County IMap data? The data provided to me by the Skagit County Sherriff inconsistent when compared to the data from IMap. How many years of collision history are being evaluated? Collision history of the proposed haul route or of all potential haul routes? Just collisions? Not traffic violations or reported road hazards? Does the collision history include damage (like a broken stop sign) that was not part of a documented accident?
14) Provide a summary memorandum/report stating opinion and position on the traffic study about the County's standards and codes, and any other applicable laws, and providing Contractors determinations and recommendations as described above.	<ul style="list-style-type: none"> Gibson should evaluate and comment on the adequacy of proposed mitigation.

Additional item:

Dump trucks vs log trucks: I have heard county officials make statements like, "log trucks have been traveling on those roads for years, dump trucks should be fine," while in reality, the following is true:

1. Dump trucks and log trucks are engineered differently and have different turning movements. Logging trucks can navigate to places dump trucks with pup trailers cannot.
2. Logging on Grip Road does not produce large quantities of traffic over multiple years. Logging on Grip road will produce increased log truck traffic for a few weeks to a few months at a time every few years *at most*.
3. Log truck traffic from Alger Mountain travels Parson Creek Road to Old Highway 99 or Highway 9 to Highway 20; it does not routinely travel on Prairie Road.
4. CNW is proposing more than 25 years of dump truck traffic on Prairie Road and Grip Road (or any other roads if they are going direct-to-market) with no real limits on the volume of trucks, days of operation, or hours of operation. This is *very different* from historical log truck traffic.

Attachments:

- Presentation W-Notes for Website.pdf
- Grip FS Road Pictures - Letter.pdf
- Road Conditions Letter.pdf
- Operating Hours.pdf
- New – Truck Acceleration.pdf.
- Accident Data.pdf

Thank you for your time and consideration.

Sincerely,

Brian Bowser
21110 Parson Creek Road
Sedro Woolley, WA 98284

January 30, 2017

Dear Mr. Cooper,

This letter is concerning PL16-0097 and is specifically addressing the hours of operation as stated throughout Concrete Nor'West's permit application and supporting documents.

Job Site Hours

Concrete Nor'West has requested unlimited operating hours at the proposed gravel mine located off Grip Road. This is possible per SSC 14.16.440 (10)(i)(i) where it states the operating hours "may be unlimited". Concrete Nor'West has also described the "typical operating hours" in multiple documents turned in to Skagit County but has not been consistent in its statements:

1. "Concrete Nor'West Grip Road Special Use Narrative" dated March 7, 2016 by Skagit County stated the typical operating hours would be Monday through Saturday 7am to 5pm. Section A of the same document states "normal hours would be 7:00 a.m. to 5:00 p.m., Monday through Friday.
2. Email from Dan Cox to John Cooper dated 8/11/16 states that normal operating hours will be Monday through Saturday 6am to 6pm.
3. Staff report states the hours of operation "will generally be limited to Monday through Saturday, from dawn till dusk. The applicant proposes that the hours of operation may be expanded based on market conditions and seasonal demands."

I would like additional details from Concrete Nor'West to help me understand what "typical operating hours" are. What are the real "typical operating hours"? Do the operating hours only apply only to mining on-site or do they extend to hauling the gravel off-site also? What does "typical" mean? How many "typical" days are there in a year? Is "typical" in June the same as "typical" in December?

Will there be any notification requirements to county, school districts, fire departments, the public, etc. when Concrete Nor'West extends their operating hours?

I would also expect this information to be important to the Hearing Examiner in order to understand if Concrete Nor'West's operation will create "significant adverse impacts to existing adjacent land uses" as called out in SSC 14.16.440 (10)(i)(i). This is the criteria that the Hearing Examiner may use to limit operating hours at the site.

I am quite confident residences near the mining operation and/or along the haul route to Grip Road will be adversely impacted by extended operating hours. Additionally, residences along the haul route will also be adversely impacted by extended operating hours.

Brian Bowser
21110 Parson Creek Road
Sedro Woolley, WA 9828

Dear Mr. Cooper,

I have had some time to look through the documents concerning PL16-0097. Below are some of the concerns I have with the transportation plan as listed in the documentation:

DN Traffic Consultants

Grip Road Intersection

1. Decisions about the Grip Road intersection are being made with information from 2013. I did not see that 2.5% of increased traffic per year was considered when calculating the data (As described in the "2013 Skagit County Road Segment & Intersection Concurrency" report).
2. Intersection has "sub-standard observed distance for both stopping and entering sight distance in southbound direction whereas the Grip Road/Site Access has a sub-standard value for entering sight distance in the eastbound direction." DN Traffic Consultants believe the permanent fix for this intersection costs too much although no cost estimate was completed.
3. The recommended solution--advanced warning signs with flashing beacons--was listed as a "potential interim" solution. Neither the Staff Report or the Hearing Examiner Report recognized this as an interim solution. Neither report listed a timeline for the Skagit County to develop a permanent solution.

Additional Studies

1. DN Traffic Consultants expected additional traffic analysis would be required as the proposed gravel pit operation was defined. This analysis has not been required by Skagit County nor offered by Concrete Nor'west.

Other Crucial Issues Not Addressed

1. The report did not address whether the truck counts were Concrete Nor'West trucks only or if they would allow additional independent operators to purchase from the pit on Grip road, thus generating additional traffic.
2. Traffic East bound on Prairie Road is allowed to pass before they reach Park Ridge Lane. This was fixed previously, but after the recent chip sealing was completed, the striping allowed for passing prior to Park Ridge Lane.
3. The F & S Grade Road intersection was not evaluated. It is also a limited site intersection and has had a significant number of accidents at the intersection.
4. Grip Road has a 40 foot right of way. Concrete Nor'West trucks will not be able to pass each other in opposite directions on several portions of Grip Road because they cannot navigate the corners and stay in their lane simultaneously.
5. Per "Skagit County Road Standards Version 5.2 May 26, 2000 section 3.13," a right of way of less than 60' can lead to additional requirements. No studies have been completed to assess the areas "road network circulation".
6. It is doubtful that a dump truck and trailer traveling East on Prairie Road can stay in its lane through the final 90-degree corner.
7. The permit describes the Grip to Prairie to Old Highway 99 North as the "haul route". Does that mean only the loaded trucks must follow this route? Empty trucks can take an alternative route? If so, what is the alternative route?
8. Prairie Road and Grip Road have insufficient "Clear Zone". The Clear Zone is "the total roadside border area, starting at the edge of traveled way, available for safe use by errant vehicles. This area

may consist of a shoulder, a recoverable slope, a nonrecoverable slope, and/or a clear run-out area. The desired width is dependent upon the traffic volumes, speeds, and the roadside geometry." Per "Skagit County Road Standards Version 5.2 May 26, 2000."

9. A pedestrian was hit by a logging truck while walking several years ago. He went to a nursing home to recover but never did make it back home. This accident is an example of what happens when you have insufficient clear zone.
10. Dump trucks will be operating during early morning hours when kids are waiting for the bus in the dark with insufficient clear zone.
11. Sedro Woolley School District has a bus turn-around area just west of the mine access at Grip Road that would be negatively impacted by heavy truck traffic coming down the hill.
12. There will be increased incidents due to West Bound Prairie Road traffic passing dump trucks just past the F&S Grade Road intersection.
13. There will be increased incidents due to East Bound Prairie Road traffic passing dump trucks near the Park Ridge Lane intersection.
14. Many clubs (bicycle, motorcycle, car) and organized athletic events use Prairie Road as part of their routes for events. Dump truck traffic, with current road design, is incompatible with this type of use. The permitting process has ignored this type of use.
15. Many people living in the area use our local roads to walk, run, or bike. Dump truck traffic, with current road design, is incompatible with this type of use. The permitting process has ignored this type of use.
16. The language in the "Skagit County Planning and Development Services Findings of Fact" is specific: "Truck trips shall not exceed an average of 46 truck trips per day or exceed 30 truck trips per hour." This combined with no restrictions on hours of operations means that Concrete Nor'West would be within their permit to operate 24 hours per day, 30 trucks per hour, for 23.3 days and shut down for the remainder of the year. I don't expect this, but my point is that none of the traffic studies determine any upper limits on trucking, hours of operation, impact to the roads and intersections. All the decisions were based on a preliminary traffic study on two intersections and an email from Dan Cox to John Copper. The email stated traffic engineer, Gary Norris, indicated that both intersections evaluated could function within level of service requirements up to 100 trucks per hour during non-peak hours. As a result, Mr. Cox limited the trucks to 30 trucks per hour during non-peak time. This number is not a limit in the permit, nor is it based on anything more than one person's opinion.
17. Actual truck trips per hour and per year appears to be on the honor system. No system of verification is discussed.
18. I did not see that trucks will be weighted prior to leaving the gravel pit. How will Concrete Nor'West verify the trucks are not overloaded prior to leaving the Grip Road gravel pit?
19. Dump Trucks have the highest fatality rate of any type of commercial truck: Per 100 million miles traveled (MMT), 5.96 fatalities.
20. How will the Bow Hill Road Reconstruction Project impact the intersection at Old 99 and Prairie Road? Project execution appears to overlap with the Burlington Northern Overpass Project.
21. How will the Burlington Northern Overpass Project impact the intersection at Old 99 and Prairie Road? Project execution appears to overlap with the Bow Hill Road Reconstruction Project.

22. How will the Samish River Bridge Repair (Old Highway 99 N.) impact the trucking route for Concrete Nor'West from the Grip Road pit to the Old 99 pit or will gravel be hauled to a different location?
23. "Skagit County Planning and Development Services Findings of Fact" states Concrete Nor'West can take product direct to market or to existing Concrete Nor'West site for processing. Trucks may go any direction from the gravel pit yet only two intersections were reviewed. The proposal submitted indicates Concrete Nor'West will take the bulk of the product from Grip Road to the gravel pit at 8198 Old Highway 99 North Road, not an existing Concrete Nor'West site. Taking it to another location is a change to the permit. Concrete Nor'West needs to complete a traffic analysis on all potential routes from the mine on Grip Road.

With all the above issues, I believe a traffic impact analysis should be completed before the permit to mine is approved. In determining what level of traffic analysis is needed, the peak allowable truck traffic allowed per the permit should be used, not an average number of trucks for a given year. The report should address route clear space, geometrics, and hazards. I also recommend accident data be included in the study based on the following information from the public data available on the Skagit County website:

On Prairie Road alone, from 2010 to 2016, 93 vehicles were abandoned, 182 traffic hazards were reported, 240 vehicle accidents were reported, and 354 traffic citations were issued.

There appears to be a safety issue on Prairie Road before we add dump trucks to the mix. The report should also address route geometrics and hazards.

To help you visualize some of our concerns, here is a picture on Prairie Road, north of Grip Road. The pavement width in the picture (20') is typical of Prairie Road and Grip Road.

Brian Bowser
21110 Parson Creek Road
Sedro Woolley, WA 9828



Truck and trailer combination will take approximately 1,774 feet and 74 seconds to accelerate to the 50 mph speed limit.



Truck up to speed here

Passing zone starts here

F&S Grade & Prairie Road
Limited sight distance and
geometry issues.

Intersection of Grip Road & Prairie Road
Blind corner
Estimated 22 seconds to travel 250'

Consequently, if you are traveling the speed limit (40mph) and you are 1,720 feet or closer to the Grip Road intersection, you will be slowing down to accommodate the dump truck.



Intersection of Grip Road & Prairie Road

F&S Grade & Prairie Road

Source of Truck Acceleration: ACCELERATION OF HEAVY TRUCKS, by Woodrow M. Poplin, P.E.

Trucks in the study were typically lighter than trucks proposed by CNW. Expect the above examples to be very conservative. Actual observed acceleration will likely be slower than shown above.

Observed evidence of this:

My wife got on I5 South bound ,at Bow Hill behind a fully loaded CNW dump truck and pup recently. The truck had a rolling start onto the on-ramp ,the ramp slopes downhill, and is approximately 1,218 feet long. The dump truck entered traffic at 34 miles per hour.

In contrast, CNW trucks at the intersection of Grip and Prairie will not have a running start and will be traveling up hill for the first 500'.

CNW Proposed Haul Route Accidents, Enforcement, Hazards

NatureDesc Vehicle Accident

Count of Category	Column Labels												Average Per Year		
	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016		2017	Grand Total
Prairie Rd / Old 99 Intersection	11	2	9	2	2	4	3	7	9	5	4	5		63	5.0
Prairie Rd - S-Curves, Near Friday Ck	2		3	3		1	3	1	5		2		2	22	1.8
Prairie Rd - Park Ridge Ln / Water Hazard Area	1			1	1	1	1	1		1				8	0.6
Prairie Rd - Water Hazard to F&S Grade Rd			1	1	1				1		1			5	0.4
Prairie Rd / F&S Grade Rd Intersection	3	1	1	2	3		1	2	1	2	1	4	1	21	1.7
Prairie Rd / Grip Rd Intersection	4	2	1	1		2	1		1		1	1	3	15	1.2
Grip Rd - Prairie Rd to Proposed Pit Entrance						1		1	1	1			1	5	0.4
Old 99 - Prairie Rd to Samish River	1	1				1				2	5			10	0.8
Old 99 - Samish River to CNW Pit Entrance	12		4	1	4	5	3	5	1	2	4	5	2	48	3.8
Grand Total	34	5	19	11	11	14	13	17	18	11	15	20	9	197	15.8

NatureDesc Traffic Enforcement

Count of Category	Column Labels												Average Per Year		
	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016		2017	Grand Total
Prairie Rd / Old 99 Intersection	4		8	8	11	6	9	7	12	13	13	9	5	105	8.4
Prairie Rd - S-Curves, Near Friday Ck		2				2		1		8		1		5	0.4
Prairie Rd - Park Ridge Ln / Water Hazard Area	1		1		1		1	1					1	14	1.1
Prairie Rd - Water Hazard to F&S Grade Rd					1							1		2	0.2
Prairie Rd / F&S Grade Rd Intersection	1	1	1	3	8	3	3	1	1	3		1		25	2.0
Prairie Rd / Grip Rd Intersection				1	1	2	2						1	8	0.6
Grip Rd - Prairie Rd to Proposed Pit Entrance						1		1		1	1			4	0.3
Old 99 - Prairie Rd to Samish River	1				1			2	5	2	2	3		16	1.3
Old 99 - Samish River to CNW Pit Entrance	9	15	5	14	23	28	21	10	14	15	12	11	6	183	14.6
Grand Total	14	20	15	26	47	41	36	22	32	42	28	26	13	362	29.0

NatureDesc Traffic Hazard

Count of Category	Column Labels												Average Per Year		
	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016		2017	Grand Total
Prairie Rd / Old 99 Intersection	4	6		3	6	7	6	4	3	5	8	3	3	58	4.6
Prairie Rd - S-Curves, Near Friday Ck		1	1				2							4	0.3
Prairie Rd - Park Ridge Ln / Water Hazard Area		1			1	4		1		1	3	4		15	1.2
Prairie Rd / F&S Grade Rd Intersection		3	2	3	5		3	2	4	4	3			29	2.3
Prairie Rd / Grip Rd Intersection	1	1	1			2	1	1						7	0.6
Grip Rd - Prairie Rd to Proposed Pit Entrance								1						1	0.1
Old 99 - Prairie Rd to Samish River	1				1		1	1			1			5	0.4
Old 99 - Samish River to CNW Pit Entrance	8	11	7	1	8	7	4	4	3	1	3	2	2	61	4.9
Grand Total	14	23	11	7	21	20	17	14	10	11	18	9	5	180	14.4

*Data for 2017 is thru 7/17

CNW Proposed Haul Route Accidents, Enforcement, Hazards

NatureDesc	Vehicle Accident													
	Column Labels	January	February	March	April	May	June	July	August	September	October	November	December	Grand Total
Prairie Rd / Old 99 Intersection	6	1	2	4	8	4	5	7	5	6	3	8	6	63
Prairie Rd - S-Curves, Near Friday Ck	1	2		3	1	1	5	1	2	4	1	1	4	22
Prairie Rd - Park Ridge Ln / Water Hazard Area				1	1				1	1	1	1	1	8
Prairie Rd - Water Hazard to F&S Grade Rd								1	2	2	1	1	1	5
Prairie Rd / F&S Grade Rd Intersection	2	3	2	2	2	2	2	1	1	2	1	1	2	21
Prairie Rd / Grip Rd Intersection	2		1				3	1	2	1	1	3	1	15
Grip Rd - Prairie Rd to Proposed Pit Entrance		1		1	1	1	1	1	1	1				5
Old 99 - Prairie Rd to Samish River	1	1				1	1	1	4	3	3	2	1	10
Old 99 - Samish River to CNW Pit Entrance	8	4	5	9	24	11	18	14	18	17	15	18	18	48
Grand Total	20	12	12	24	11	18	14	14	18	17	15	18	18	197

NatureDesc	Traffic Enforcement													
	Column Labels	January	February	March	April	May	June	July	August	September	October	November	December	Grand Total
Prairie Rd / Old 99 Intersection	11	6	7	9	8	6	6	12	11	14	9	6	6	105
Prairie Rd - S-Curves, Near Friday Ck	1			2	1	2	1	1	1	1	1	1	1	5
Prairie Rd - Park Ridge Ln / Water Hazard Area				1	1	2	2	1	7	2	1	2	1	14
Prairie Rd - Water Hazard to F&S Grade Rd							1	1	1	2	4	1	1	25
Prairie Rd / F&S Grade Rd Intersection	3	3	1	1	1	4	2	4	3	3	4	1	1	8
Prairie Rd / Grip Rd Intersection		1		1	1	2	1	1	3	3	1	1	1	4
Grip Rd - Prairie Rd to Proposed Pit Entrance		1	1	1	3	1	2	2	3	1	1	1	3	16
Old 99 - Prairie Rd to Samish River	13	18	12	21	15	15	16	16	11	17	13	14	18	183
Old 99 - Samish River to CNW Pit Entrance	28	29	21	37	27	31	37	37	40	33	27	23	29	362

NatureDesc	Traffic Hazard													
	Column Labels	January	February	March	April	May	June	July	August	September	October	November	December	Grand Total
Prairie Rd / Old 99 Intersection	7	6	1	7	1	8	8	4	5	5	8	2	4	58
Prairie Rd - S-Curves, Near Friday Ck				1	2	1	2	2	1	1	2	1	1	4
Prairie Rd - Park Ridge Ln / Water Hazard Area	2	2	1	1	2	1	1	2	1	2	2	1	1	15
Prairie Rd / F&S Grade Rd Intersection	1	3	2	3	1	4	1	1	3	6	4	1	1	29
Prairie Rd / Grip Rd Intersection	1	1		1			2	2	2	2	1			7
Grip Rd - Prairie Rd to Proposed Pit Entrance				1	1	1	1	1	1	1	1			1
Old 99 - Prairie Rd to Samish River	8	1	7	2	3	4	6	6	8	3	9	6	4	61
Old 99 - Samish River to CNW Pit Entrance	19	13	11	16	8	17	17	17	21	14	25	9	10	180

CNW Proposed Haul Route Accidents, Enforcement, Hazards

NatureDesc Vehicle Accident

Count of Category	Monday	Tuesday	Wednesday	Thursday	Friday	Saturday	Sunday	Grand Total
Prairie Rd / Old 99 Intersection	6	4	9	7	12	12	13	63
Prairie Rd - S-Curves, Near Friday Ck	3	1	2	5	1	3	7	22
Prairie Rd - Park Ridge Ln / Water Hazard Area	1	1	1	1	3		1	8
Prairie Rd - Water Hazard to F&S Grade Rd		1		3	1			5
Prairie Rd / F&S Grade Rd Intersection	5	2	1	4	2	6	1	21
Prairie Rd / Grip Rd Intersection	3		1	3	4	3	1	15
Grip Rd - Prairie Rd to Proposed Pit Entrance	1		1	1	1	1	2	5
Old 99 - Prairie Rd to Samish River	8	3	6	11	5	5	10	48
Grand Total	27	12	21	35	32	33	37	197

NatureDesc Traffic Enforcement

Count of Category	Monday	Tuesday	Wednesday	Thursday	Friday	Saturday	Sunday	Grand Total
Prairie Rd / Old 99 Intersection	12	11	10	19	23	21	9	105
Prairie Rd - S-Curves, Near Friday Ck		1	1		3			5
Prairie Rd - Park Ridge Ln / Water Hazard Area		6	5	1	1		1	14
Prairie Rd - Water Hazard to F&S Grade Rd				1			1	2
Prairie Rd / F&S Grade Rd Intersection	5	3	3	3	4	4	3	25
Prairie Rd / Grip Rd Intersection		1		2	1	4		8
Grip Rd - Prairie Rd to Proposed Pit Entrance		6	3		1		4	14
Old 99 - Prairie Rd to Samish River		6	1		3	4	2	16
Old 99 - Samish River to CNW Pit Entrance	28	23	31	28	33	20	20	183
Grand Total	45	51	54	54	69	53	36	362

NatureDesc Traffic Hazard

Count of Category	Monday	Tuesday	Wednesday	Thursday	Friday	Saturday	Sunday	Grand Total
Prairie Rd / Old 99 Intersection	5	8	9	11	8	8	9	58
Prairie Rd - S-Curves, Near Friday Ck		1			1	2		4
Prairie Rd - Park Ridge Ln / Water Hazard Area	1	2	3	2	1	3	3	15
Prairie Rd / F&S Grade Rd Intersection	2	1	7	4	6	2	7	29
Prairie Rd / Grip Rd Intersection		1	1				5	7
Grip Rd - Prairie Rd to Proposed Pit Entrance		1	1		1		1	4
Old 99 - Prairie Rd to Samish River	8	3	11	10	10	9	10	61
Old 99 - Samish River to CNW Pit Entrance	16	17	32	27	28	24	36	180

CNW Proposed Haul Route Accidents, Enforcement, Hazards

NatureDesc Vehicle Accident

Count of Category	Column Labels	Wee Hours					Mid Day	Evening	Late Evening	Grand Total
		Midnight to 5:30AM	5:30AM - 9:00AM	9:00AM to 3:30PM	3:30PM to 7:00PM	7:00PM to Midnight				
	Row Labels	15	11	28	8	1	63			
	Prairie Rd / Old 99 Intersection	4	4	8	3	3	22			
	Prairie Rd - S-Curves, Near Friday Ck	1	3	3	1	1	8			
	Prairie Rd - Park Ridge Ln / Water Hazard Area	5	2	10	1	3	21			
	Prairie Rd - Water Hazard to F&S Grade Rd	7	4	4	1	3	15			
	Prairie Rd / F&S Grade Rd Intersection	1		3		1	5			
	Prairie Rd - Prairie Rd to Proposed Pit Entrance	1		5		3	10			
	Old 99 - Prairie Rd to Samish River	12	11	16	5	4	48			
	Old 99 - Samish River to CNW Pit Entrance	46	36	78	19	18	197			
	Grand Total									

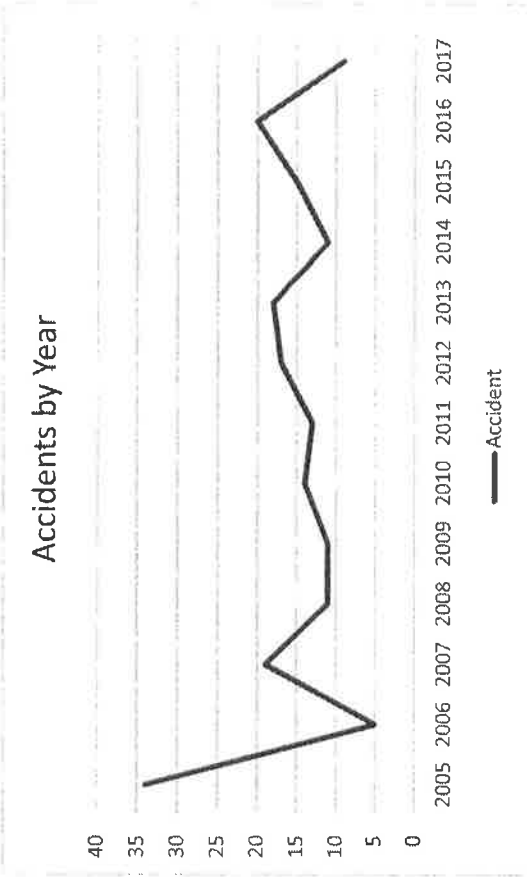
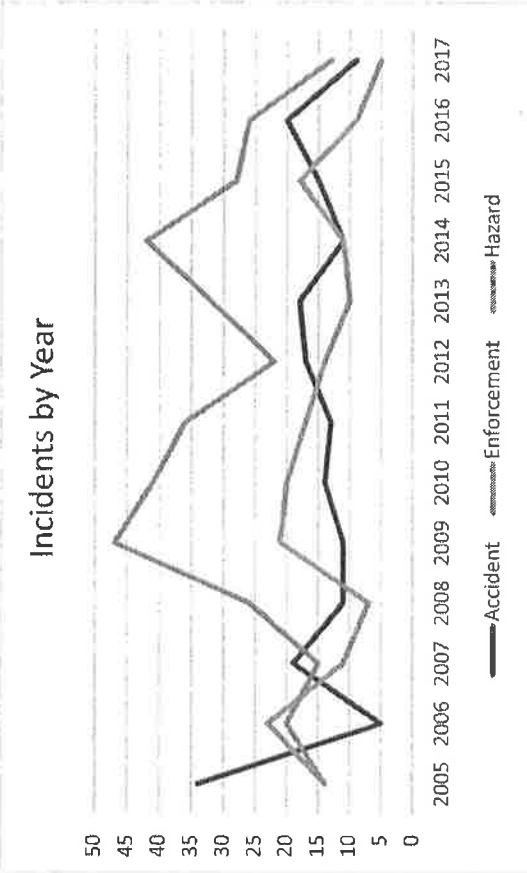
NatureDesc Traffic Enforcement

Count of Category	Column Labels	Wee Hours					Mid Day	Evening	Late Evening	Grand Total
		Midnight to 5:30AM	5:30AM - 9:00AM	9:00AM to 3:30PM	3:30PM to 7:00PM	7:00PM to Midnight				
	Row Labels	19	20	48	13	5	105			
	Prairie Rd / Old 99 Intersection	1	2	4	1	5	14			
	Prairie Rd - S-Curves, Near Friday Ck	5	2	6	1	2	14			
	Prairie Rd - Park Ridge Ln / Water Hazard Area	2	6	2	3	1	14			
	Prairie Rd - Water Hazard to F&S Grade Rd	1	2	3	1	1	8			
	Prairie Rd / F&S Grade Rd Intersection	5	6	3	2	3	16			
	Prairie Rd / Grip Rd Intersection	36	27	76	35	9	183			
	Grip Rd - Prairie Rd to Proposed Pit Entrance	69	64	159	55	15	362			
	Old 99 - Prairie Rd to Samish River									
	Old 99 - Samish River to CNW Pit Entrance									
	Grand Total									

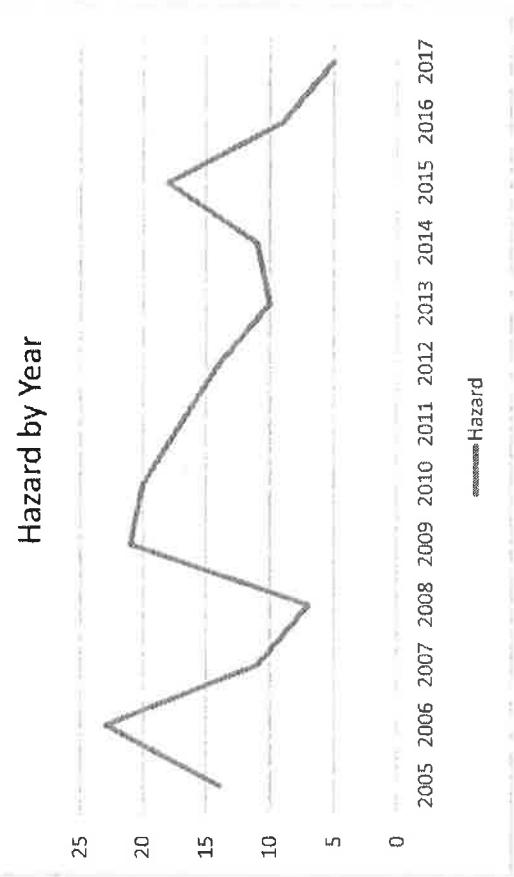
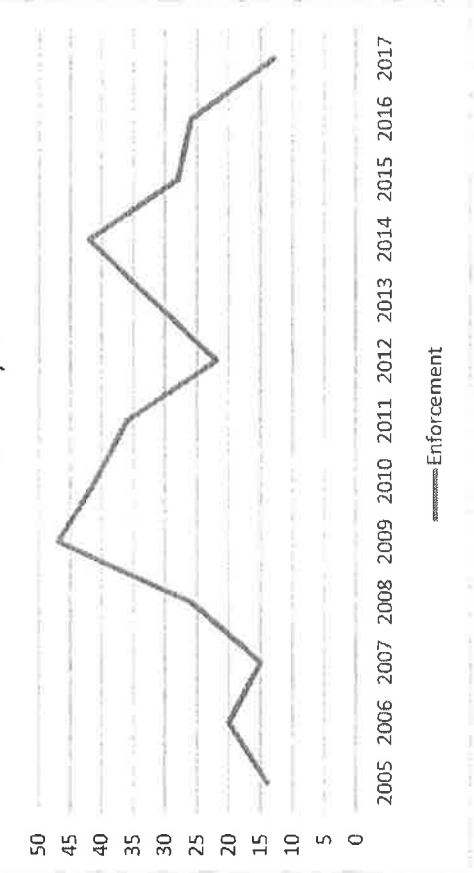
NatureDesc Traffic Hazard

Count of Category	Column Labels	Wee Hours					Mid Day	Evening	Late Evening	Grand Total
		Midnight to 5:30AM	5:30AM - 9:00AM	9:00AM to 3:30PM	3:30PM to 7:00PM	7:00PM to Midnight				
	Row Labels	10	12	19	10	7	58			
	Prairie Rd / Old 99 Intersection	5	4	4	4	6	15			
	Prairie Rd - S-Curves, Near Friday Ck	4	4	11	4	6	29			
	Prairie Rd - Park Ridge Ln / Water Hazard Area	1	2	3	1	1	7			
	Prairie Rd / F&S Grade Rd Intersection	2		2		1	5			
	Prairie Rd / Grip Rd Intersection	18	8	19	5	11	61			
	Grip Rd - Prairie Rd to Proposed Pit Entrance	40	26	62	20	32	180			
	Old 99 - Prairie Rd to Samish River									
	Old 99 - Samish River to CNW Pit Entrance									
	Grand Total									

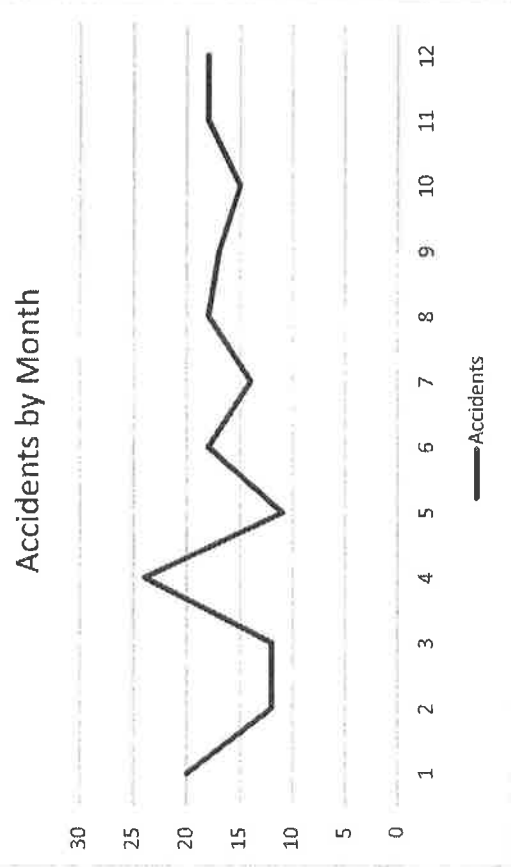
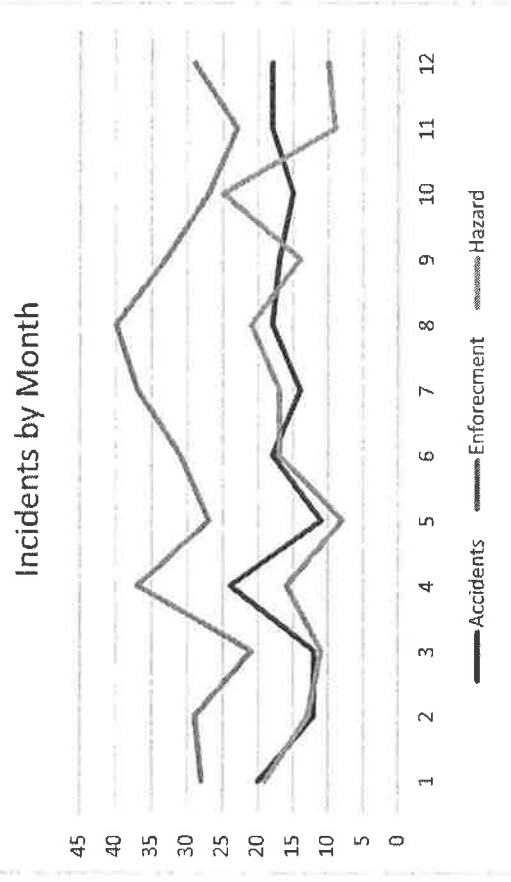
Incidents By Year



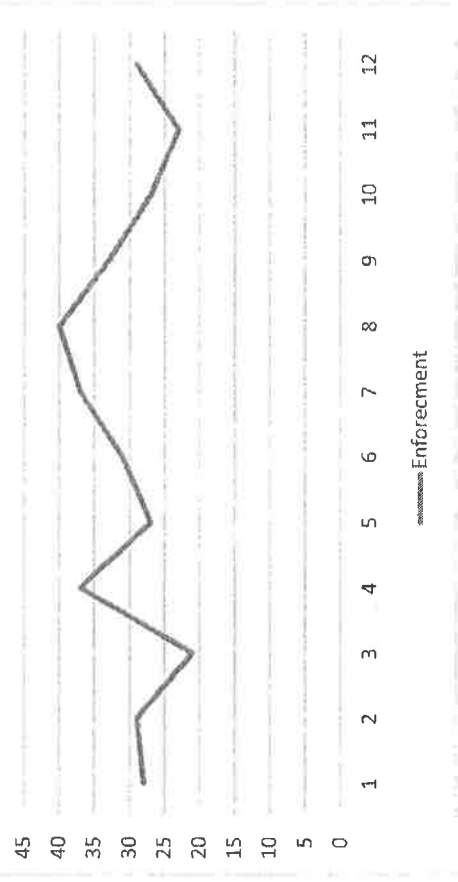
Enforcement by Year



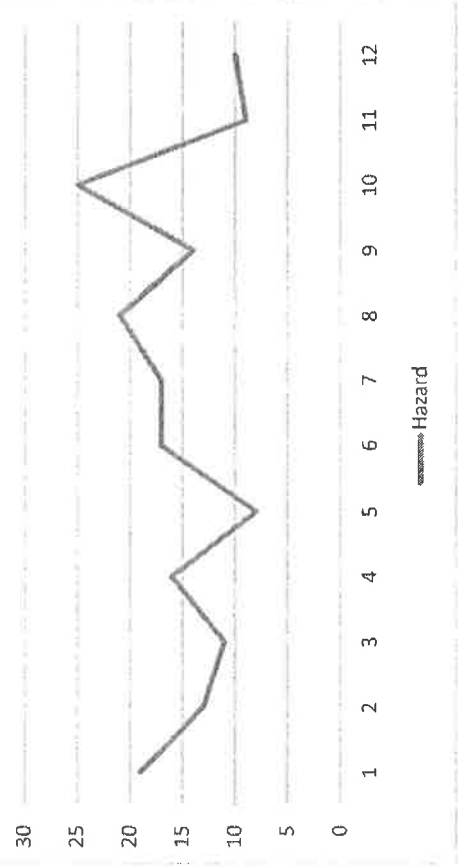
Incidents By Month



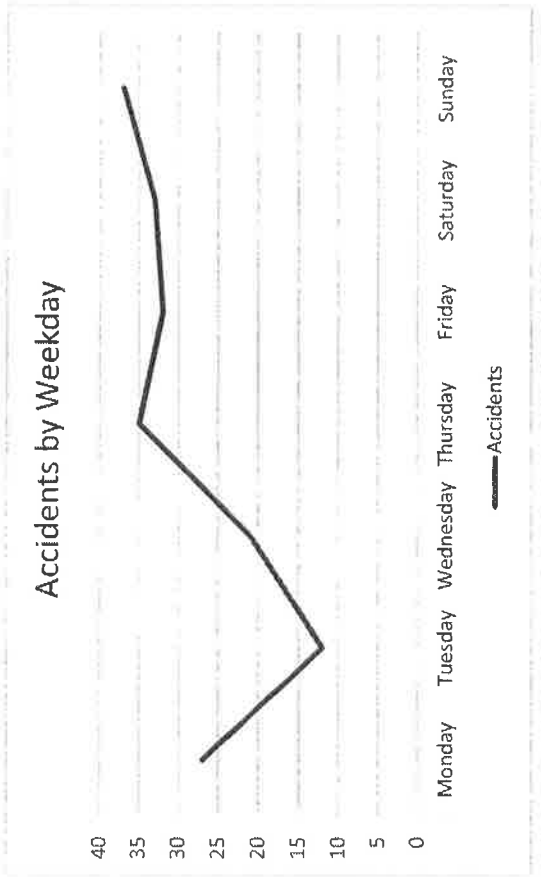
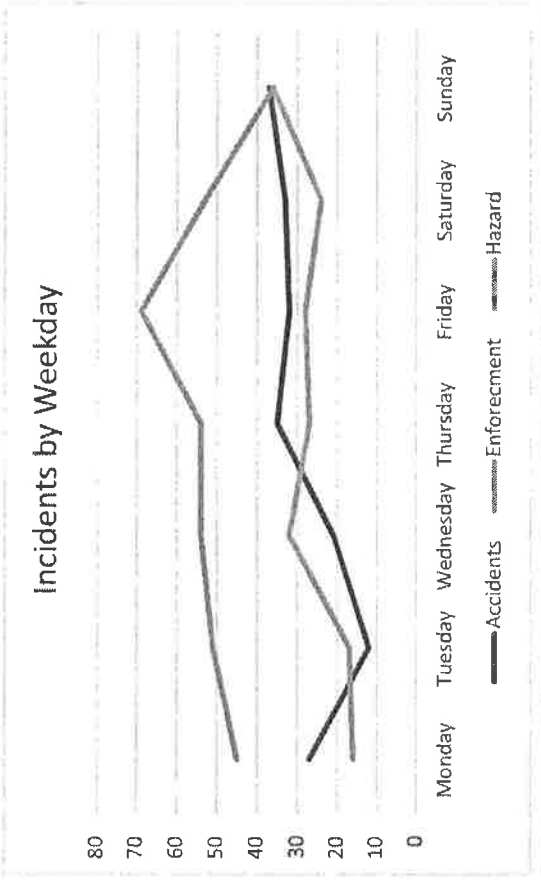
Enforcement by Month



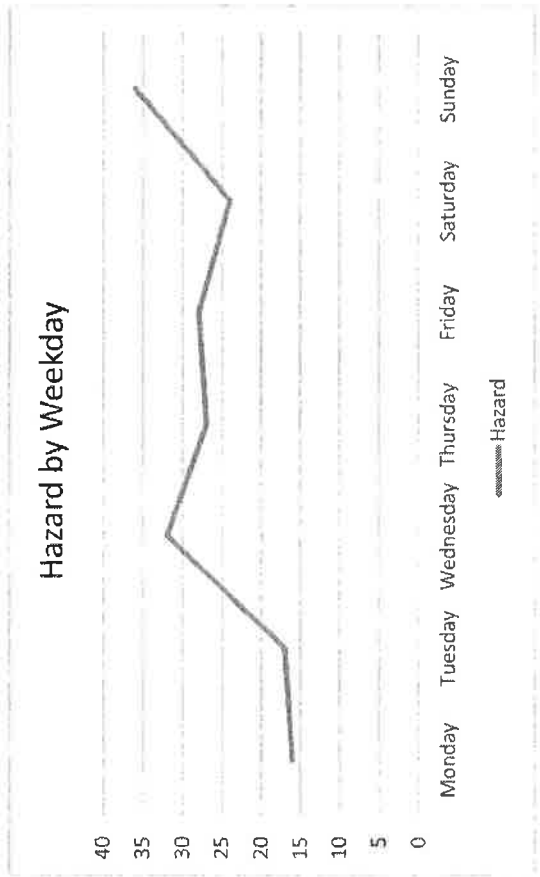
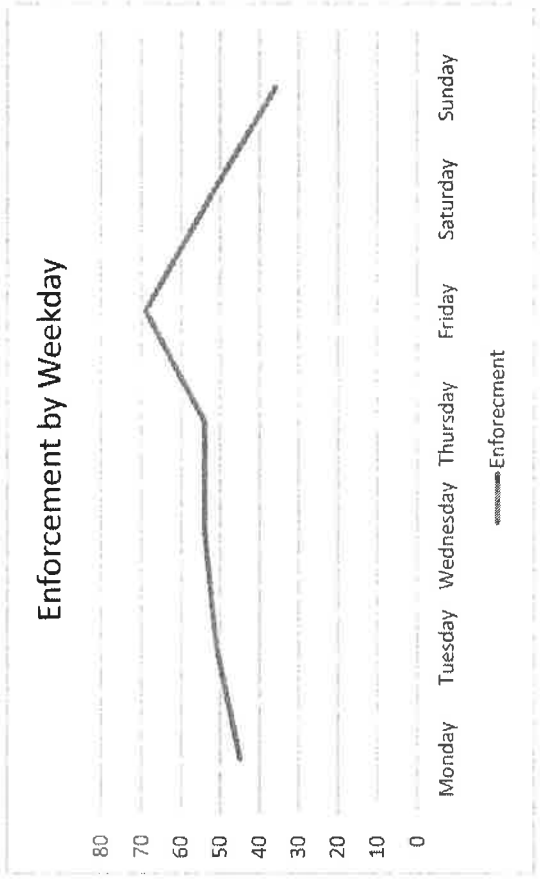
Hazard by Month



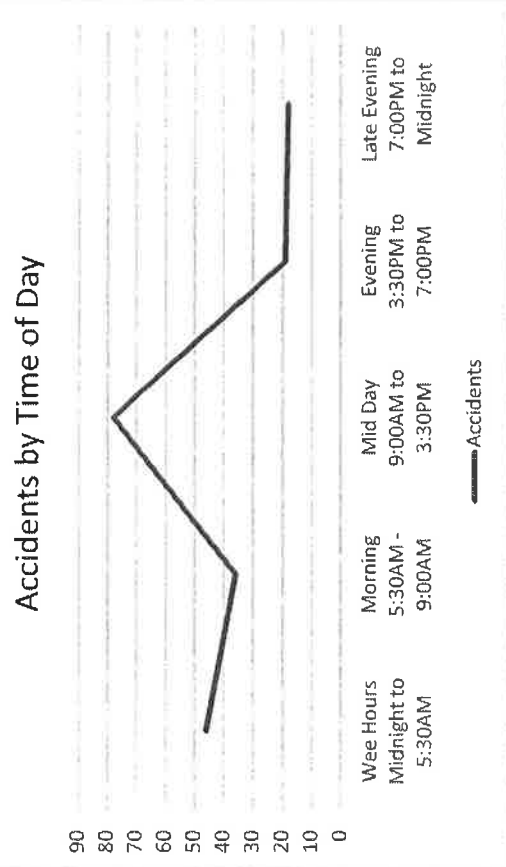
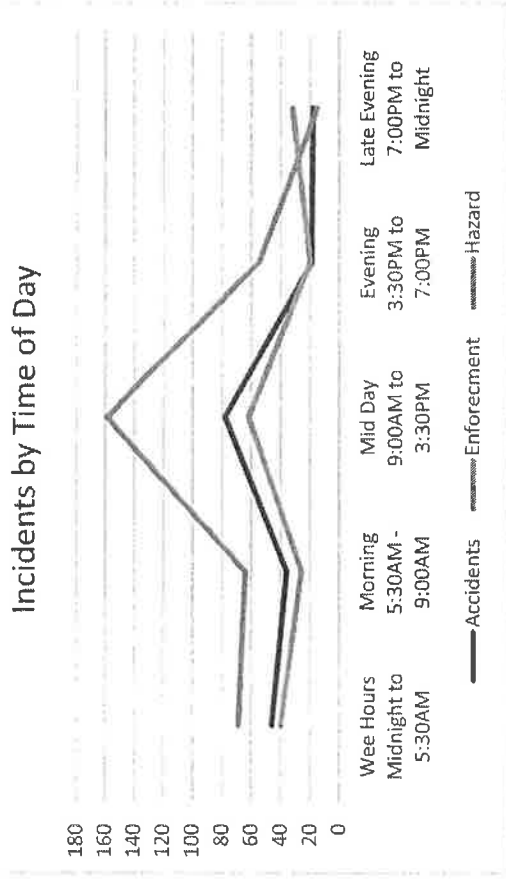
Incidents By Weekday



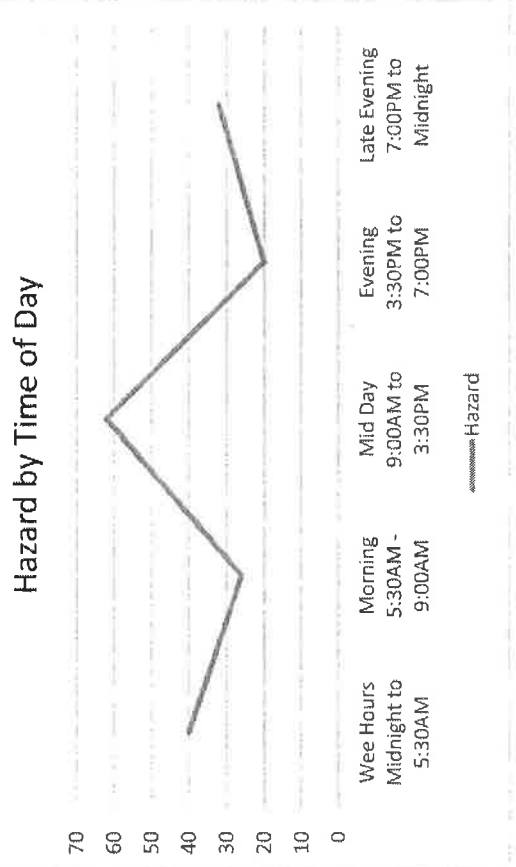
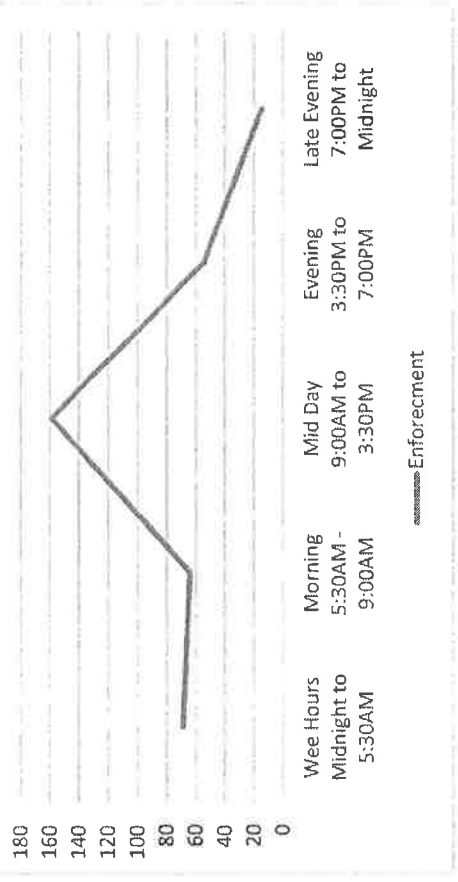
Enforcement by Weekday



Incidents by Time of Day



Enforcement by Time of Day



Incidents By Year

Year	Accident
2005	34
2006	5
2007	19
2008	11
2009	11
2010	14
2011	13
2012	17
2013	18
2014	11
2015	15
2016	20
2017	9

Year	Enforcement
2005	14
2006	20
2007	15
2008	26
2009	47
2010	41
2011	36
2012	22
2013	32
2014	42
2015	28
2016	26
2017	13

Year	Hazard
2005	14
2006	23
2007	11
2008	7
2009	21
2010	20
2011	17
2012	14
2013	10
2014	11
2015	18
2016	9
2017	5

Incidents By Month

Month	Accidents
1	20
2	12
3	12
4	24
5	11
6	18
7	14
8	18
9	17
10	15
11	18
12	18

Month	Enforcement
1	28
2	29
3	21
4	37
5	27
6	31
7	37
8	40
9	33
10	27
11	23
12	29

Month	Hazard
1	19
2	13
3	11
4	16
5	8
6	17
7	17
8	21
9	14
10	25
11	9
12	10

Incidents By Weekday

Weekday	Accidents
Monday	27
Tuesday	12
Wednesday	21
Thursday	35
Friday	32
Saturday	33
Sunday	37

Weekday	Enforcement
Monday	45
Tuesday	51
Wednesday	54
Thursday	54
Friday	69
Saturday	53
Sunday	36

Weekday	Hazard
Monday	16
Tuesday	17
Wednesday	32
Thursday	27
Friday	28
Saturday	24
Sunday	36

Incidents By Time of Day

Time of Day	Accidents
Wee Hours Midnight to 5:30AM	46
Morning 5:30AM - 9:00AM	36
Mid Day 9:00AM to 3:30PM	78
Evening 3:30PM to 7:00PM	19
Late Evening 7:00PM to Midnight	18

Time of Day	Enforcement
Wee Hours Midnight to 5:30AM	69
Morning 5:30AM - 9:00AM	64
Mid Day 9:00AM to 3:30PM	159
Evening 3:30PM to 7:00PM	55
Late Evening 7:00PM to Midnight	15

Time of Day	Hazard
Wee Hours Midnight to 5:30AM	40
Morning 5:30AM - 9:00AM	26
Mid Day 9:00AM to 3:30PM	62
Evening 3:30PM to 7:00PM	20
Late Evening 7:00PM to Midnight	32

Estimated Accident Totals Using Cited NHTSA Study

Location	2005-2017	Estimated Unreported	Total Estimated Accidents
Prairie Rd / Old 99 Intersection	63	19	82
Prairie Rd - S-Curves, Near Friday Ck	22	7	29
Prairie Rd - Park Ridge Ln / Water Hazard A	8	2	10
Prairie Rd - Water Hazard to F&S Grade Rd	5	2	7
Prairie Rd / F&S Grade Rd Intersection	21	6	27
Prairie Rd / Grip Rd Intersection	15	5	20
Grip Rd - Prairie Rd to Proposed Pit Entrance	5	2	7
Old 99 - Prairie Rd to Samish River	10	3	13
Old 99 - Samish River to CNW Pit Entrance	48	14	62
Grand Total	197	60	257

Estimated accident totals were generated using this report:

<https://crashstats.nhtsa.dot.gov/Api/Public/ViewPublication/812183>



Description: The haul route from CNW pit near Kelleher Road and Old Highway 99 North. Traveling North on Old 99 to Prairie Road, East on Prairie Road to Grip Road, East on Grip Road to the entrance of the haul road, North approximately 2 miles on the gravel haul road.

Issues: The permit does not limit traffic to this route. The permit allows for direct to market sales – meaning trucks can leave from the pit to wherever the market takes them. Traveling East on Grip Road there are four 90 degree turns. Traveling East on Prairie Road would take a dump truck through about 2 miles of narrow, curved road. Truck and pup trailers would have issues on many of these curves. Traveling South on F&S takes trucks through a very limited view intersection (later slide)

Only the proposed haul route has been officially reviewed by CNW and Skagit County. The review was limited to the intersection of Grip Road and Prairie Road and the intersection of Prairie Road and Old Highway 99 North.



Description: Grip Road traveling East of the mine entrance. Four 90 degree turns are not navigable for dump truck and pup trailer.

Issues: Example of what you find on other potential haul routes. This is why every potential haul route needs to be identified and studied prior to issuing a permit.



Description: Grip Road and Prairie Road intersection.

Anyone ever see an accident at this intersection? Anyone ever have a near miss at this intersection?

Issues: Per DN Traffic Consultants, this intersection is sub-standard. Should have 445' of sight distance. DN recommended fixing the sight distance issue but due to cost, recommend "advanced warning signs with flashing beacons". DN did not provide any cost estimates of the recommended permanent fix.

A county official discussed this intersection with a Sherriff dispatched to an accident at Grip and Prairie Road. The sheriff said that a flashing light is not adequate for the intersection. He also stated that the configuration of Grip Road is insufficient for a truck and a pup. This was confirmed visually when the County sent a dump truck and pup trailer to test the proposed haul route.



Description: Intersection of Old Hwy 99 N and Prairie Road from the West.

Who here has seen an accident at this intersection? Has anyone had a near miss? Any confusion on whose turn it is to go next? Ever see the intersection backed up significantly?

Issues: This intersection has near misses and accidents on a daily basis prior to adding regular dump truck traffic to the intersection.

It was acknowledged by Skagit County at an informational meeting discussing the Burlington Northern Overpass Project that this intersection is a problem but it costs about \$3 million dollars for a round-a-bout.

The Burlington Northern Overpass Project was scheduled to start 2/21 with an initial duration of 18 months. For 18 months after the project starts traffic will detour through this intersection making it much busier than it already is. We will see additional accidents at this intersection as a result.

Bottom line is this intersection has too many safety issues for today's use before adding dump trucks with pup trailers.



Description: Traveling East from Old 99 – This is the first 90 degree curve just past the Friday Creek Bridge on Prairie Road.

Issues: A West bound dump truck and pup trailer cannot stay in its lane through this corner without the trailer leaving the pavement on the inside of the corner. This has been confirmed by local truck drivers and by witnessing Skagit County on the haul route test run.



Description: Traveling East on Prairie Road. Approximately 1.5 miles East of Grip Road. Road width, shoulder, and road conditions are typical of Prairie Road.

Issues: This fifth wheel trailer was in its lane but veered over the centerline prior to entering the curve so the trailer would not leave the pavement as it travels through the corner. Notice the space between the trailer and the fog line? Looks like about 18" after crossing the center line. This combination is smaller than a dump truck and pup.



Description: Prairie Road at Park Ridge Lane. Traveling East, you just passed through the two 90 degree corners and are entering the first straight away.

Issues: The issue at Park Ridge Lane needs to be fixed regardless of the CNW mining operation. East bound traffic on Prairie Road is allowed to pass prior to Park Ridge Lane. This can create a situation where someone Eastbound is passing while someone from Park Ridge Lane is entering the roadway Westbound. Not a combination many of us want to encounter. When dump truck traffic is added, you will have people trying to pass as soon as possible so they don't get stuck behind the dump truck. Who wants to be stuck behind a slow dump truck that also might drop a rock and nail your windshield?

Anyone ever see water is often over the road way in this area? This creates a traffic hazard and a weak spot for dump trucks to tear up.

Has anyone ever noticed their vehicle roll side to side between Park Ridge Lane and Grip Road? This is something to pay attention to. We will have 105,000 pound trucks traveling 50 mph with the road giving them a little bit of weave. This is much more manageable in a car than it is a dump truck.

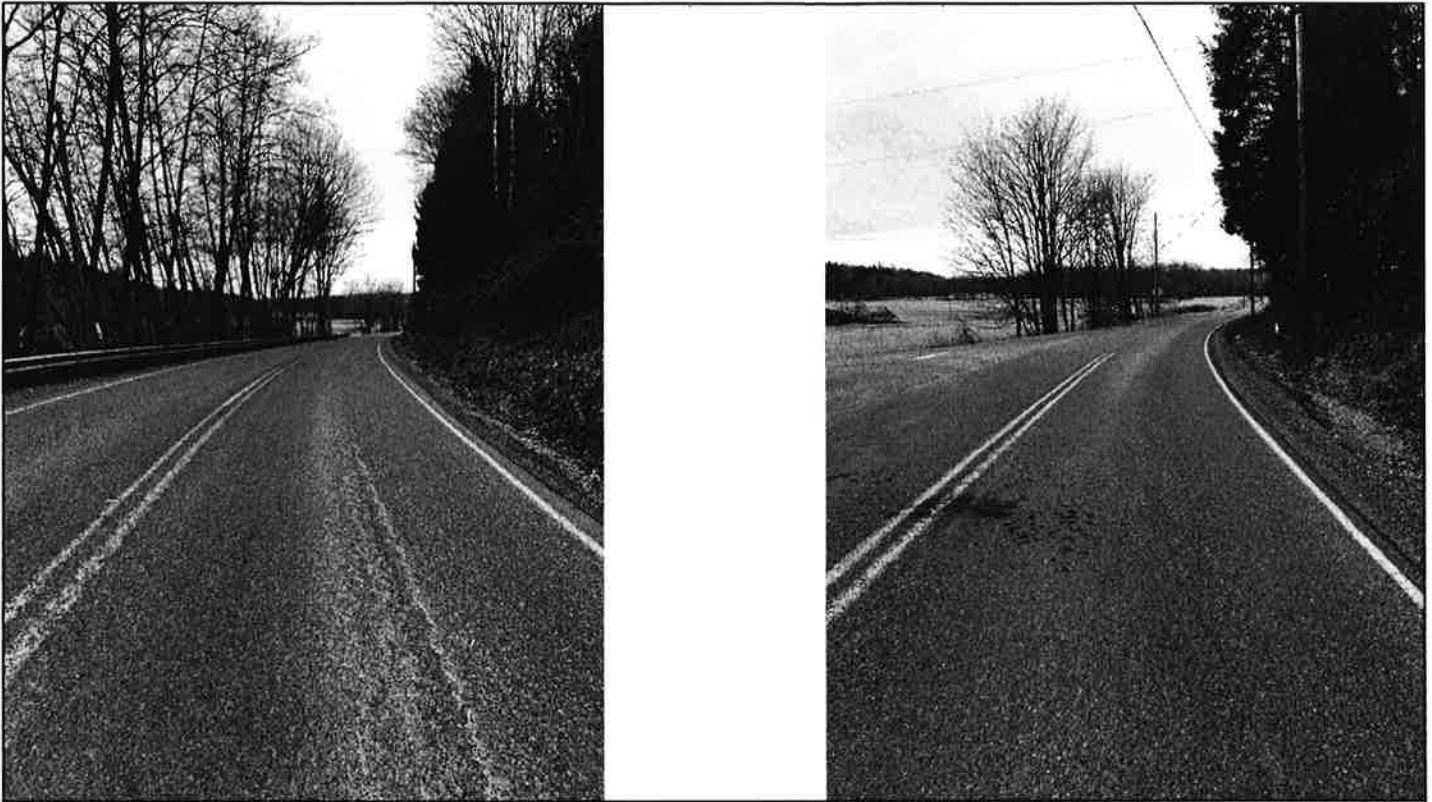
Another note: Otto Day used to walk almost every day through this stretch of road. He was hit by a logging truck and never made it out of the nursing home.



Description: Intersection of F & S Grade Road and Prairie Road.

Issue: This intersection has not been part of any review that I am aware of. East Bound traffic tends to lean into the center line due to the geometry of the curve and the intersection. This will create a bad situation when someone decides to cut the corner and a dump truck and pup trailer is coming the other way with no place to go.

Another challenge at this intersection is West Bound Prairie Road traffic making a left-hand turn onto F & S Grade Road. The next slide shows the limited view at this intersection.



Description: Intersection of F&S Grade Road and Prairie Road. View while traveling Westbound on Prairie Road.

Issues: The first picture is at 455' from the intersection of Prairie Road and F&S Grade Road. I believe this is how much clear view is required at 40 mph.

The second picture is at 50' from the intersection of Prairie Road and F&S Grade Road. This is the distance where you have appropriate site distance. There have been a few accidents here too.

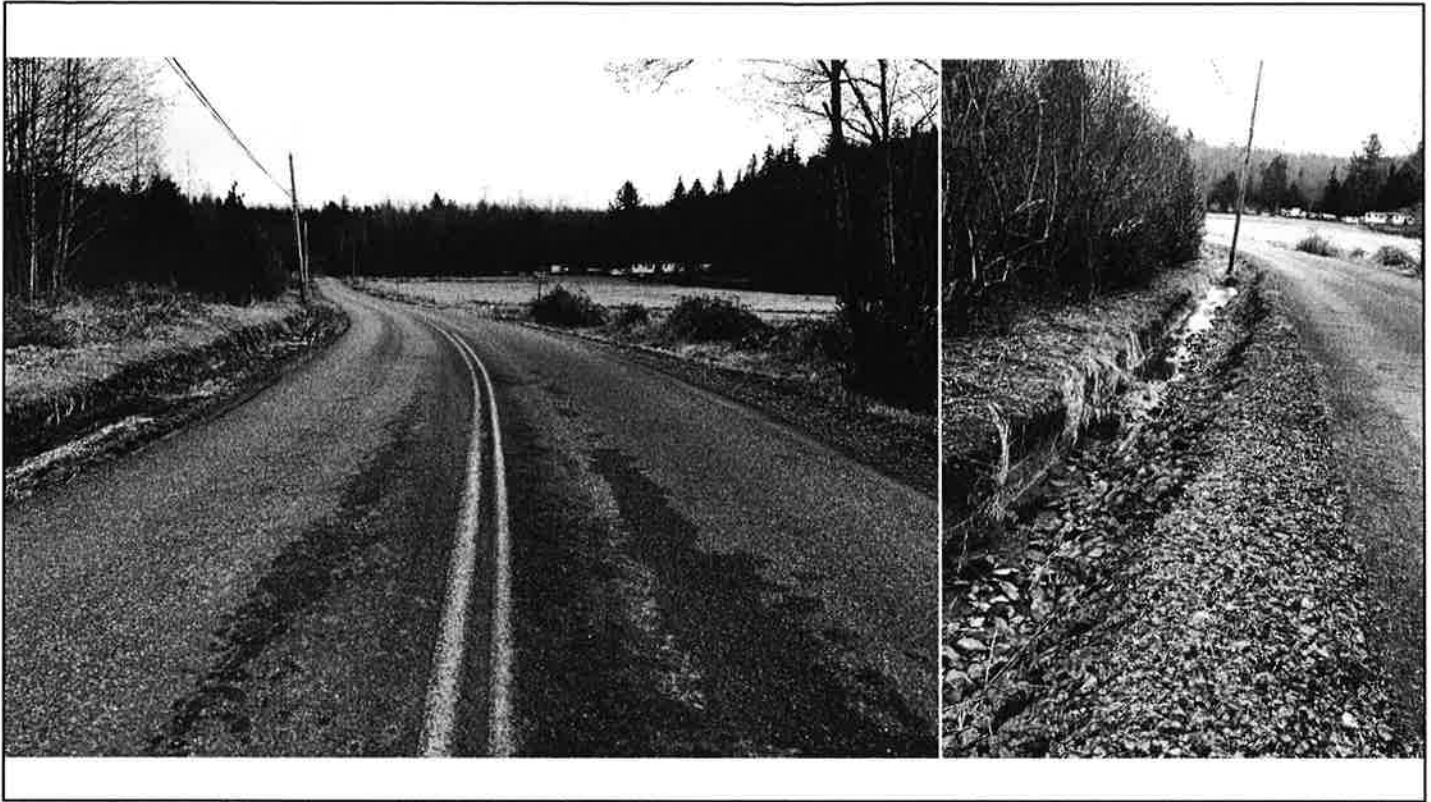
This is where the passing lane starts for West Bound Prairie Road. **Can you envision this:** You just caught up to a fully loaded truck and pup, and it has accelerated to 25 mph. How many people are going to try to pass ASAP? The view is limited and the geometry of Prairie Road at this location pulls you to the South. Bad things are going to happen with people passing at this location. You certainly don't want to be on a bicycle or a motorcycle heading East on Prairie Road near this intersection when this happens.



Description: East Bound on Grip Road a few hundred yards from the intersection of Grip Road and Prairie Road.

Issues: Not certain the truck and pup can pass the corner just prior to the Samish River bridge and keep the pup in its lane. There is not a lot of room for the truck to swing wide. (When the County did their test run, I was unable to see the truck move through this area.)

Grip Road is narrow, has abrupt lane edges, only a 40' right of way as apposed to a 60' right of way, and no fog line.



Description: Street view of the previous slide. Just past the Samish River Bridge, looking East on Grip Road to the first corner on the hill.

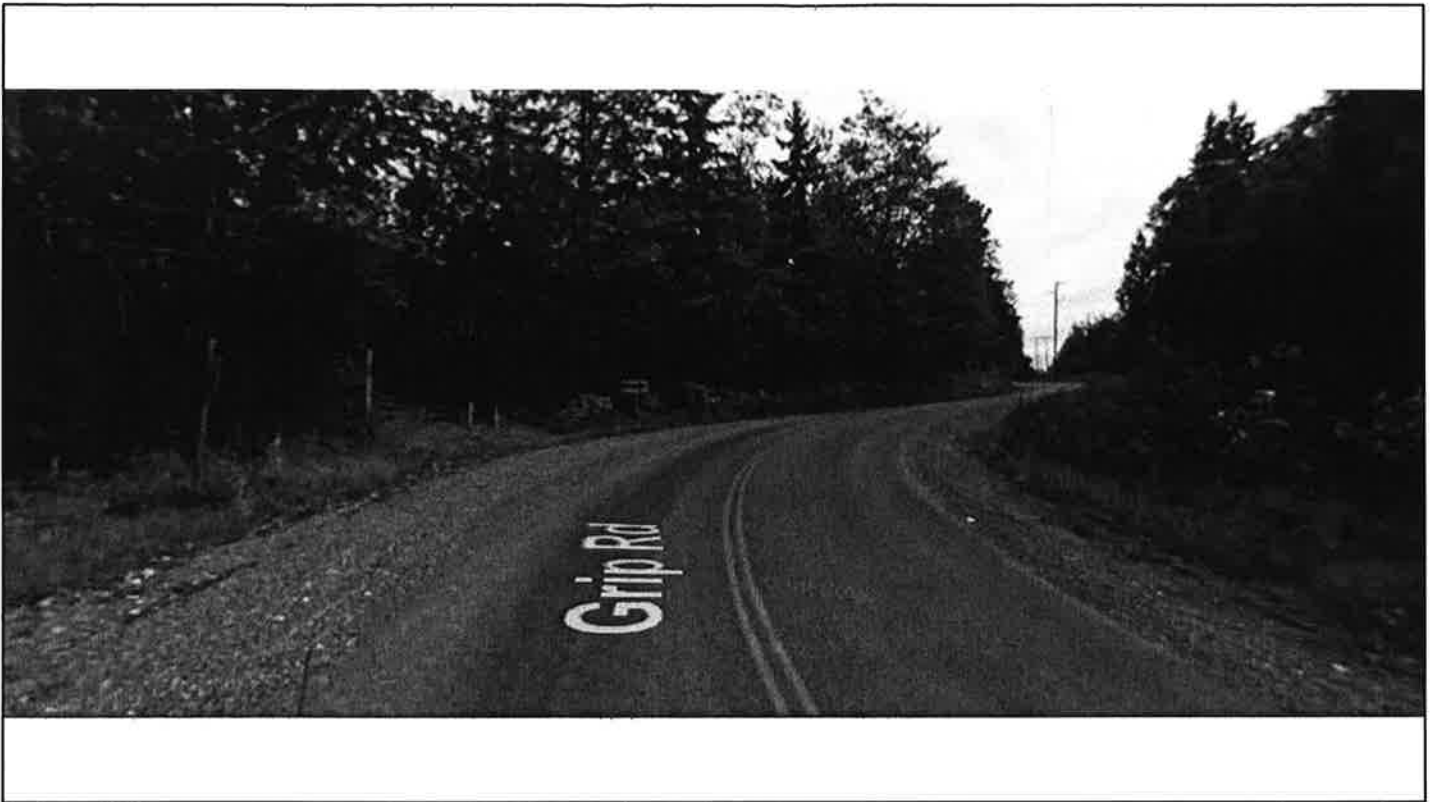
Issues: This area floods often. Notice, no fog line, the abrupt lane edge and the telephone pole in the center of the ditch. Grip road only has a 40' right of way, not a 60'. This limits options to fix these issues.



Description: Still heading East on Grip Road. Showing the two corners going up the hill.

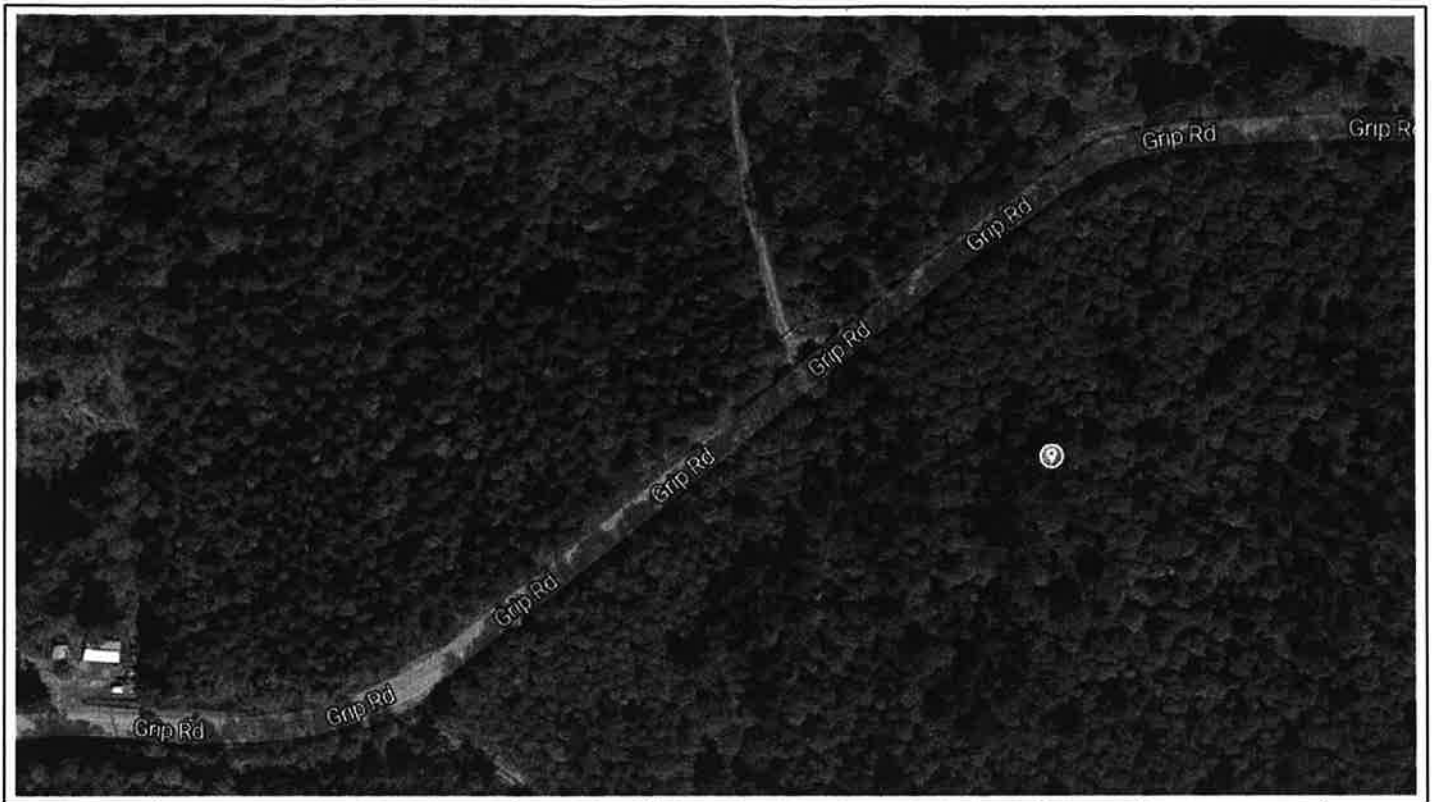
Issue: This first corner does not accommodate a dump truck and a pup trailer heading East or West. Traveling East, the pup trailer tires are in the gravel on the inside of the corner. Traveling West, the pup trailer is at least 1.5 feet over the yellow line. Now picture two trucks trying to pass at the same time. I was unable to witness the County truck and pup traveling through the second corner as I was too far back.

This section of road has no guardrails and has been prone to sluffing for years.



Description: A close-up traveling East on Grip Road through the curves going up the hill

Issues: Notice the width of the road, abrupt lane edges, no fog lines, and no guard rail.



Description: Entrance to the mine from Grip Road.

Issues: The entrance to Grip Road is inadequate/does not meet requirements. Possible site distance issues at the entrance to Grip Road. (Will show on the next slide.)

The house directly downhill from the mine entrance has a site distance issue with their driveway – it will be worse with fully loaded truck and pup coming down hill at them. (Approximately 105,000 lbs) There are many driveways on the haul route that will have similar issues.



Description: The first picture is looking West toward the mine entrance. This is the view at 445' from the mine entrance/exit on Grip Road. The second picture is 374' from the mine entrance/exit on Grip Road.

Issues: Possible site issues. Again, notice no fog lines, cracking pavement, narrow shoulders, etc.



Description: Overview of the haul route from Grip Road to the mine.

Additional Notes: This project is currently planned for a 25-year duration. This is not a temporary thing. There is a lot more gravel in the area than the 68 acres CNW is requesting to mine which leads me to believe, we are really looking at more than 25 years of gravel mining at this location.

Additional issues with the haul route not covered are: school buses, bus stops, road shoulder issues, traveling in poor weather conditions, noise, air brakes, etc.

Prairie Road Accident Data – From County Crime Map

Reported Incident	2010	2011	2012	2013	2014	2015	2016	Total	Annual Ave.
Dui - Alcohol Or Drugs	5	6	9	5	6	1	3	35	5.8
Abandoned Vehicle	18	15	17	12	6	14	11	93	15.5
Traffic Enforcement	62	47	41	53	57	50	44	354	59.0
Traffic Hazard	34	25	22	24	23	33	21	182	30.3
Vehicle Accident	33	26	33	34	21	42	51	240	40.0
Total	152	119	122	128	113	140	130	904	150.7

This data is readily available from the Crime Map on Skagit County's website. I believe this data is over stated and double counts some data. An example of this is someone has an auto accident and gets ticketed. The incident could potentially show up twice as an auto accident even though it was one event. The Crime Map does not allow me to parse out the information so that I can limit data to just the proposed haul route. This data is all of Prairie Road.

I have requested and received more detailed data from the Skagit County Sheriffs Office. The data could not be produced in an "electronic" format that allowed any analysis. Because of this, I am manually entering all of the data and will have a clearer picture of the real accident statistics. The data will not include hit and run issues like someone taking out the stop sign at Grip and Prairie Road (happened recently) or someone who might have hit my Grandmas mail box. We found the mailbox a ¼ mile down the road and over a guard rail about 6 months after it disappeared.

