

MEMORANDUM

To: City of Nanaimo
cc: Georgia Desjardins (Seacliff); Teunesha Evertse (Ascend Planning); Toby Seward; Tim Stevens
From: Nadine King, P.Eng., PTOE
Our File #: 2701.B01
Project: Sandstone Development
Date: July 21, 2021
RE: OCP Amendment – Transportation

1.0 INTRODUCTION

Seacliff (Sandstone) Properties is now planning to separate the OCP Amendment and Rezoning processes. At this time only the OCP Amendment is being submitted while the Rezoning application will follow with completion of more detailed traffic analysis and project definition. This memo outlines the planned level of detail for the Transportation Section of the OCP Amendment for Sandstone including changes in the land use from the 2009 OCP and changes in the high-level transportation mitigation measures.

2.0 SUMMARY OF TRANSPORTATION FOR OCP AMENDMENT

The Transportation Section will provide a long-range vision for transportation (including general purpose vehicles, trucks, pedestrians, cyclists, and transit) for the site. This vision will be articulated at a high level.

A high-level conceptual road network within the parcels and connection points to the surrounding existing road network will be provided. The location of potential traffic mitigations will be identified with the type / timing each mitigation to be confirmed through additional study at the rezoning level. High-level discussion of roadway connections within the Ministry of Transportation and Infrastructure (MoTI) jurisdiction (Highway 1 and Highway 19) will be included as part of the proposed mitigation measures.

A high-level discussion on inclusion of pedestrian and bicycle facilities (on-road and separate trails) and their connectivity to the surrounding area and networks will be provided along with a high-level discussion on providing for a potential transit exchange and additional routing in the Cinnabar Valley / Cedar areas.

The OCP Amendment will include a commitment to complete more detailed assessment / studies of the transportation network and mitigation measures during rezoning.

3.0 PROPOSED LAND USE CHANGE

The 2009 Sandstone Master Plan identified the land uses for the site as urban node / regional commercial centre, light industrials, and a range of neighbourhood density from low / estate housing to high density housing. The new plan for Sandstone will retain the low / medium density residential housing, but reduces the high density housing significantly. In addition, the amount of light industrial is significantly increased with the commercial centre replaced by warehouse/big box type retail. The focus of the land use in Sandstone is shifted from a regional commercial centre / urban node (town centre) to a regional industrial / employment centre. The following illustrates the differences between the planned between 2009 and 2021 land uses for information only and is not intended to be included in the OCP Amendment.

TABLE 1: 2009 VS 2021 LAND USES

	Land Use	2009 Units/Sq. ft.	2021 Units /Sq. ft.
Parcel 1 (north of Cedar Rd)	Single Family	500	400
	Low Rise Multi-family	900	200
	Retail	5,000 sq. ft.	0 sq. ft.
Parcel 2 (east of Landfill)	Light Industrial	450,000 sq. ft.	1,000,000 sq. ft.
Parcel 3 (south of Duke Point Hwy)	Heavy Industrial	450,000 sq. ft.	800,000 sq. ft.
Parcel 4 / 5 (west of Landfill)	Retail	850,000 sq. ft.	175,000 sq. ft.
	Retail (Big Box)	0 sq. ft.	300,750 sq. ft.
	Low Rise Multi-family	400	0
	Mid-Rise Multi-Family	0	1,000
	Light Industrial	0 sq. ft.	1,200,000 sq. ft.
	Recreation Centre	0 sq. ft.	25,000 sq. ft.
Parcel 6 (Cinnabar Valley)	Single Family	355	400
	Low Rise Multi-family	245	200
	Retail	5,000 sq. ft.	0 sq. ft.

With this change in land use a high-level review of change in vehicle trip generation was undertaken. In the PM peak hour, which is the highest generator of the two peak hours, the proposed 2021 land use will generate 2% less traffic than the 2009 land use (approximately 100 trips in the PM peak hour). In the AM peak hour, with more employment focus, the amount of traffic generated will remain lower than the PM peak hour. However, the AM peak hour traffic, with the proposed 2021 land use traffic will increase by 53% over the 2009 land use. The majority of this increase is inbound traffic to the industrial land uses. This AM peak hour inbound traffic (to Sandstone) is generally commuting in the opposite direction to existing patterns where traffic is heading into north Nanaimo, downtown, and Vancouver Island University.

4.0 MITIGATION MEASURES

With the proposed change of the land use to an industrial focused centre the proposed mitigation measures were assessed at a high-level. As noted above the exact type / scale of the mitigation measures will occur at rezoning where more detailed assessment will be undertaken. Pedestrian, bicycle, and transit mitigations will be essentially the same as 2009.

4.1 CINNABAR VALLEY

The proposed land use in the Cinnabar Valley portion of the site remains similar to the 2009 and continues the general residential nature of this area. The Cinnabar Valley has one main route to Highway 1 via Extension Road / Cranberry Road. There is, however, a secondary access through White Rapids / Nanaimo River Road that is long and circuitous to provide more than limited access suitable for emergency use. See **Figure 1** for White Rapids / Nanaimo River Road route.



Figure 1: White Rapids / Nanaimo River Road Route

The 2009 plan had no identified mitigations for this area other than connecting the site to Rajeeana Way, Kelsie Road, and the flyover. As part of the 2021 update the main road connection will be made directly from the site to Extension Road as well as from Roberta Road and Bedall Road to reduce impacts on existing neighbourhood roads. Improvements to pedestrian, bicycle, and left turns are planned for Extension Road due to the development.

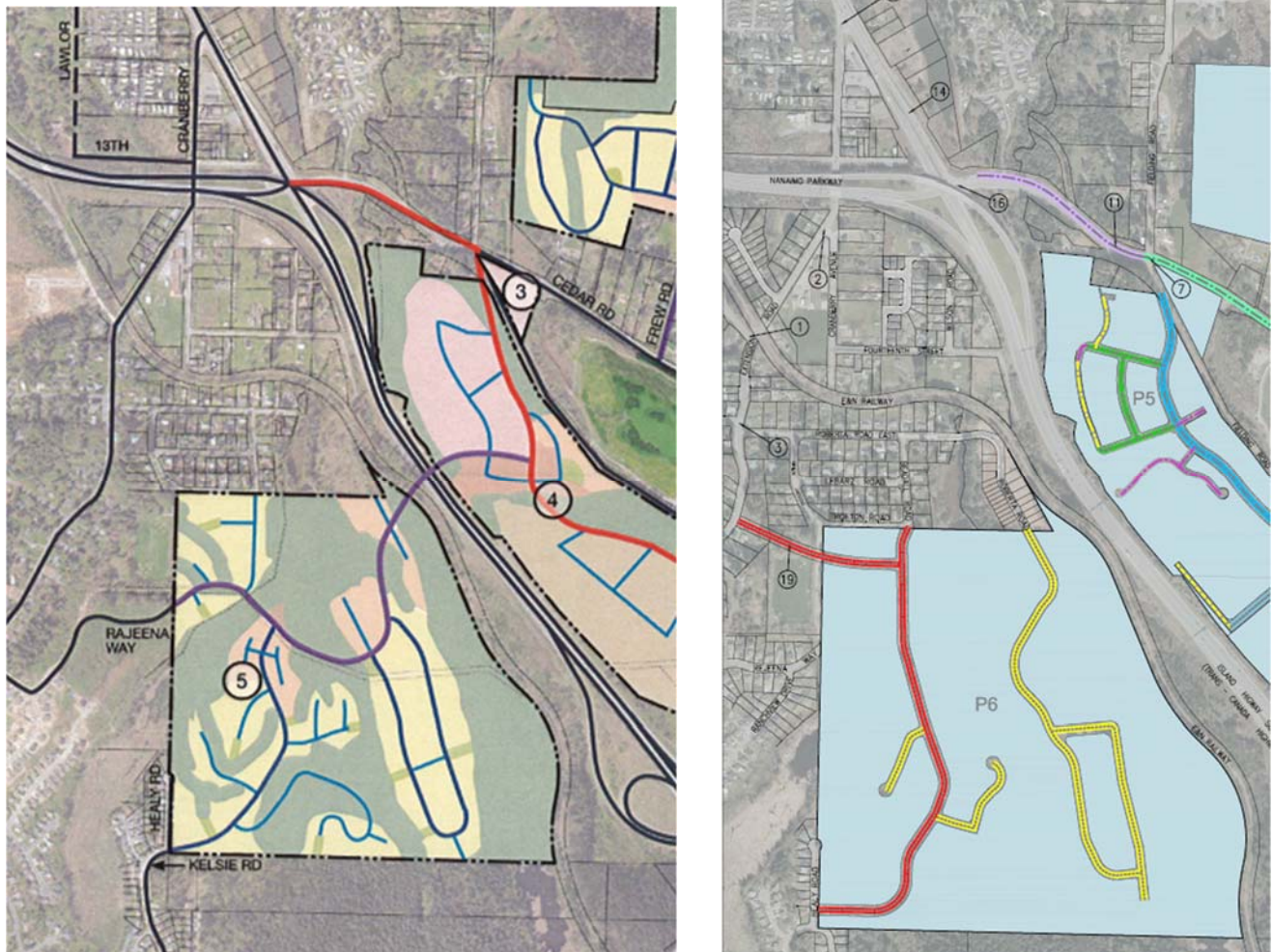


Figure 2: 2009 (left) and 2021 (right) Cinnabar Valley Road Network Connections

The 2009 plan had an overpass (flyover) over Highway 1 that connected this portion of Sandstone (Parcel 6) to the town centre area of the development on the east side of Highway 1. This proposed connection would have provided a more direct connection between Parcel 6, and the other existing residents of Cinnabar Valley, to the retail in the town centre. With the change in land use focus away from town centre to industrial and bid box retail there is a reduced need / desire for Parcel 6 traffic to travel to the parcels on the east side of Highway 1. The flyover also provided redundancy / secondary route to/from the Cinnabar Valley that is much more convenient than the White Rapids route. To provide this redundant access for Cinnabar Valley, a right in / right out connection to Highway 19 via McKeown Road is proposed. Along with this new connection improvements to the intersection of Extension Road / McKeown Road are proposed. This new connection provides a more direct access for Parcel 6, and other Cinnabar residents, to Highway 19 and Highway 1 than

travelling through Parcel 4/5 to access Cedar Road or Duke Point Highway to access areas north/south of the development. The 2009 land use, with the town centre, would have provided desired amenities for Cinnabar Valley residents and the flyover would have been a desired route between the two areas. However, with the reduced neighbourhood level retail in Parcel 4/5 being replaced with big box style retail and industrial uses the need for Cinnabar Valley residents to access Parcel 4/5 is significantly reduced. These residents will continue to access existing amenities (such as groceries, pharmacy, bank, and other general retail needs) from the Tenth Street commercial (Chase River), downtown Nanaimo, or further north rather than heading to Parcel 4/5. By not providing the flyover this will also reduce the amount of traffic drawn into and through the industrial area where it is not desirable to have heavy truck traffic mixing with commuting passenger vehicles. The flyover option also has no potential for adding a connection to Highway 1 from the flyover as there is insufficient space for adding ramps between the Cedar Interchange and Duke Point Interchange. This would be a very significant cost for building a road and bridge between two completely different land use areas (residential and industrial) for little or no real gain within the transportation network.

4.2 CEDAR ROAD

The proposed mitigations along Cedar Road are similar to the 2009 Plan with upgrades to Cedar Road corridor and as needed upgrades in traffic control to key intersections to the development.

4.3 DUKE POINT HIGHWAY

The 2009 mitigation for Duke Point Highway and Highway 1 south of Duke Point Highway included:

- Relocation of the Morden Road / Highway 1 traffic signal to Minetown Road / Highway 1
- Extension Minetown Road on east side of Highway 1, through Parcel 3 and over the Duke Point Highway to Fielding Road (now Sandstone Spine Road)
- Add westbound right turn exit (Ramp D on **Figure 3**) from Duke Point Highway into Parcel 2 (north side of Duke Point Highway)
- Add new northbound off (exit) ramps from Highway 1 (over/under/extension off existing northbound on and off ramps) to Parcel 3 (south of Duke Point Highway) and to Fielding Road (north of Duke Point Highway). These are Ramps A and B on Figure 3.
- New eastbound off ramp (Ramp G on Figure 3) extending from the Duke Point Highway Bridge deck to exit traffic to Parcel 3 (south).

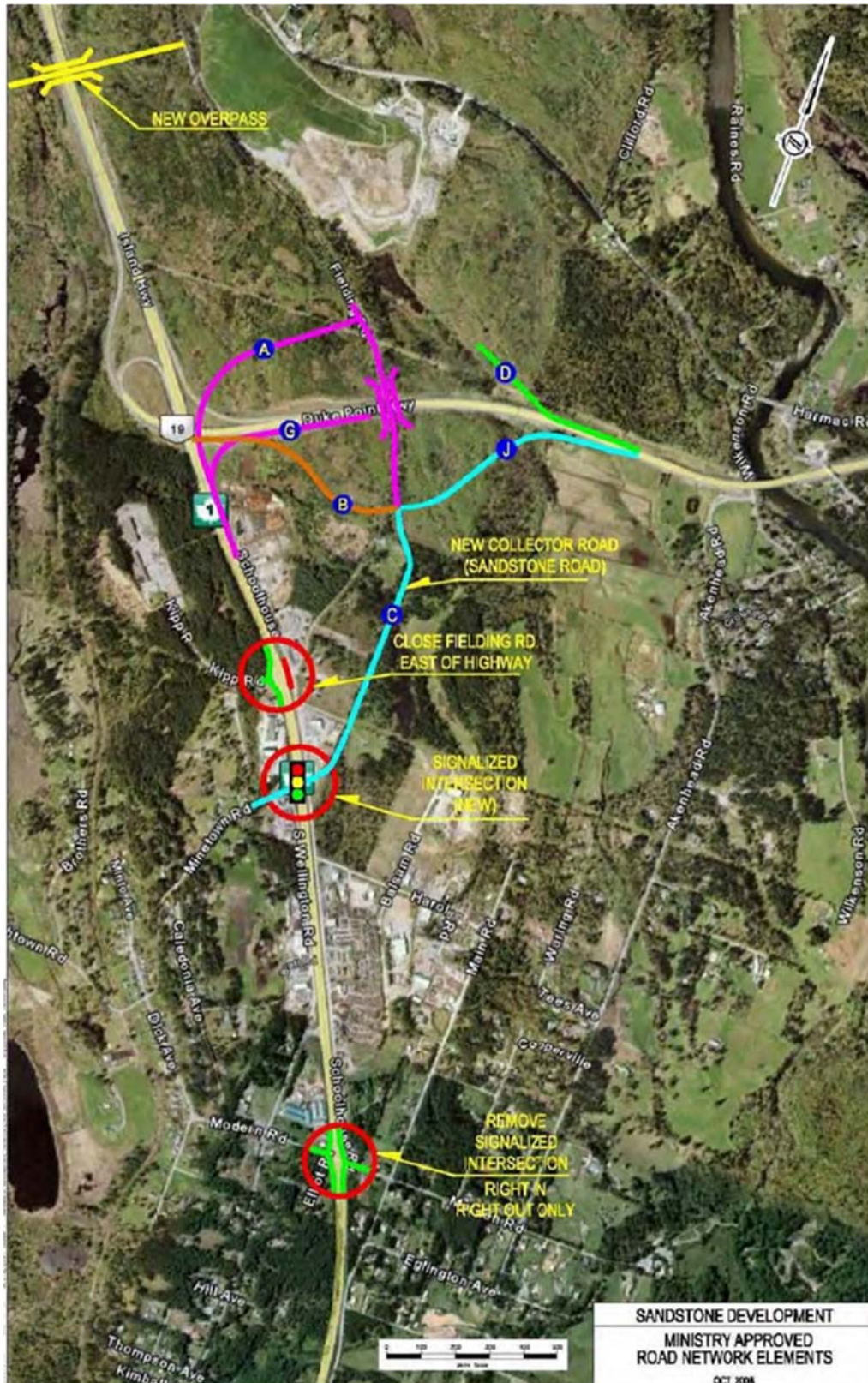


Figure 3: 2009 Duke Point Highway and South Network

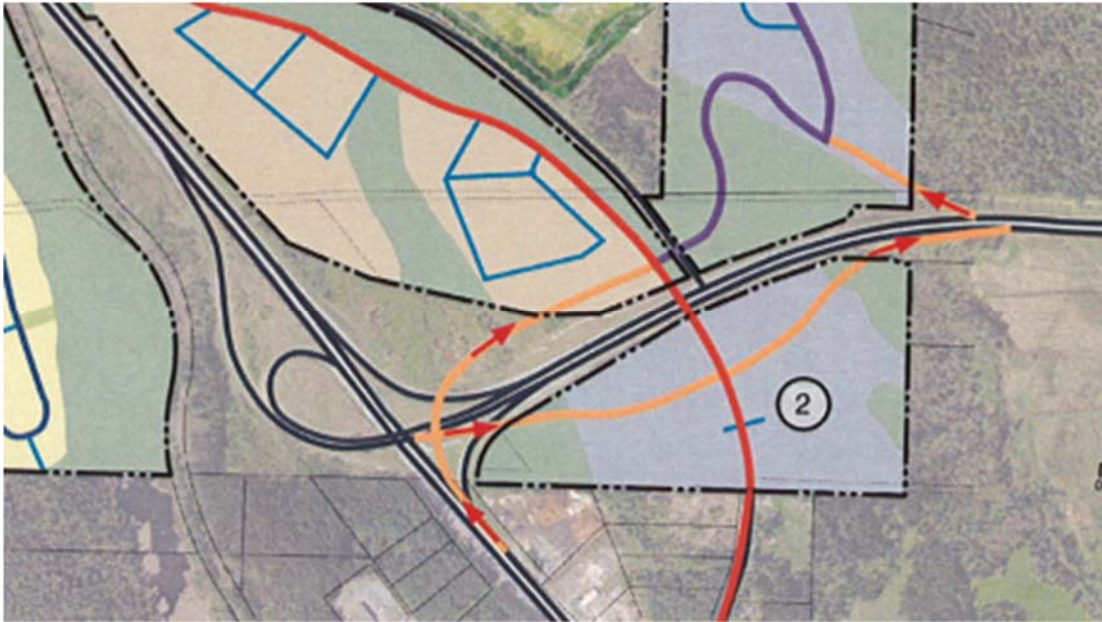


Figure 4: 2009 Duke Point Highway Proposed Ramp Connections

These proposed 2009 mitigations focused on traffic mainly to / from Highway 1; however, with this no traffic could exit from Sandstone and head west to Highway 1 via the interchange ramps. All of the traffic heading to the west (to head north/south on Highway 1) would have to either utilize Fielding Road (Sandstone Boulevard) to Cedar Road and use the signal at Cedar Road / Highway 1 or travel south through the industrial Parcel 3 to the new signal at Minetown Road. Traffic from south of the development would also have to use the Minetown Road signal to access the development without using Cedar Road. The westbound exit from Duke Point Highway is focused on exiting traffic to Parcel 2 industrial land use but would require traffic to loop on the development road network to access the overpass to Parcel 3 industrial space and Parcel 4/5.

The proposed 2009 mitigations are replaced, in 2021, with a connection to the east of the Duke Point Interchange. This connection may start as a right in / right out connection and grow to a full movement connection to meet development demands. Additional laning will be explored for the northbound on ramp at Duke Point / Highway 1 / northbound exit to Highway 19. Additional laning on the existing Duke Point Interchange will be reviewed in the rezoning application process.

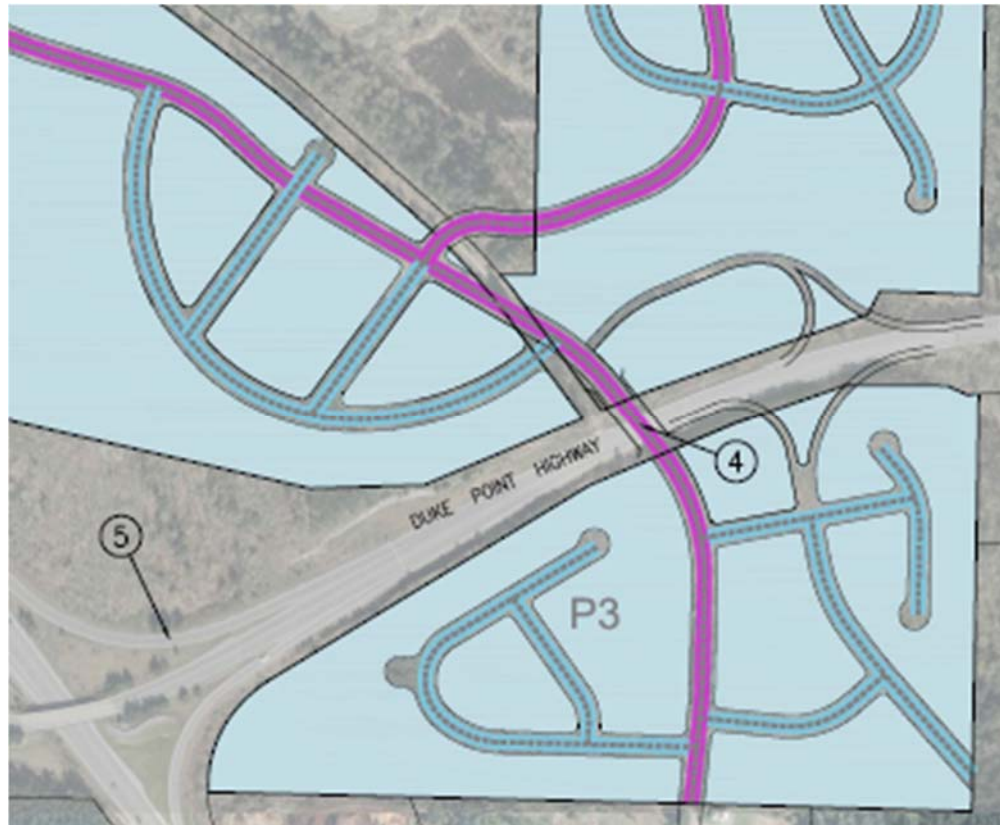


Figure 5: 2021 Potential 2021 Mitigation Options for Duke Point Highway

A full movement connection will provide full and direct access between Parcels 2, 3, and 4/5 which all have significant industrial land use which require access between Duke Point Industrial area, Duke Point Terminal (port), and Highway 1. This proposed mitigation will also provide improved access to Highway 19 (Nanaimo Parkway) and a secondary exit from the development (Parcels 2, 4, and 5) over Cedar Road. The connection will provide a secondary route from Sandstone to Highway 19 (Nanaimo Parkway) that can be utilized by drivers over Highway 1 to head north. The proposed Duke Point Highway connection will eliminate the need to relocate an existing Highway 1 (at Morden Road) traffic signal and build a new road through properties not owned by the developer (or within the City of Nanaimo) to connect to Minetown Road. The 2009 planned ramps, signal relocation, and flyover were designed to provide similar access to the full access to the parcels, but in a more spread-out / circuitous manner. The proposed 2021 full movement connection to Duke Point Highway reduces the amount of roads and infrastructure required and eliminates the need to obtain right-of-way from properties in the RDN.

4.4 HIGHWAY 1 CORRIDOR

In the 2009 plan, the Highway 1 Corridor from Cedar Road to Tenth Street/Maki Road only identified a City driven mitigation of providing the Cranberry Connector to mitigate impacts along Highway 1. However, in our opinion this mitigation is not adequate. Additional laning and protected left turns are planned, in the 2021 plan, at Cranberry Road / Highway 1 to mitigate the added Sandstone Parcel 6 development. Additional mitigation for Cranberry Road / Highway 1, Highway 1 / Cedar Road and, Highway 1 / Tenth Street / Maki Road intersections are planned to be reviewed during the rezoning application process.

5.0 CONCLUSIONS

The 2021 OCP Amendment proposes to change the land use from a regional commercial centre / mobility hub with a town centre node, residential housing in multiple forms, and industrial (employment) areas to an industrial focused regional servicing centre. This change in land use, while higher for the industrial space, generates similar PM Peak hour traffic to the proposed 2009 land use. In the AM peak hour, the amount of traffic is higher than the proposed 2009 land use; however, the increase in traffic is mainly inbound to the industrial parcels and runs counterflow to the prevailing AM peak hour direction of traffic on the surrounding road network.

The change in land use type also required a review of the 2009 transportation mitigation measures. The 2009 improvements included a flyover from Parcel 6 to Parcel 4/5, a partial interchange with additional ramps at the Duke Point Interchange, and an extension of Minetown Road with relocated at Highway 1 / Minetown Road from Morden Road. These 2009 improvements are proposed to be replaced, in 2021, with a full connection on Duke Point Highway connecting to Sandstone Spine and extending through Parcel 3, 4, and 5 to Cedar Road. The full connection will provide more direct access for the industrial land uses to Duke Point industrial areas, ferry (used by truck traffic), and Highway 1. The connection over Highway 1 (Parcel 6 to Parcel 4/5) is proposed to be replaced with a connection from McKeown Road to Highway 19 (right in / right out) to provide a second, more direct, route to the Cinnabar Valley and provide more appropriate access for the residential Parcel 6 to access the greater Nanaimo area since the land use on the east side of Highway 1 is proposed to be industrial focused and less attractive Cinnabar Valley residents.

During the rezoning process each mitigation measure will be confirmed and validated including road cross sections, traffic control, and intersection laning.