

SANDSTONE MITIGATION PACKAGE SUMMARY

Table 10 and 11 as presented in the Sandstone Development Traffic Impact Assessment (TIA) dated 2023-SEP-05, with two additional columns, one to reference Schedule A: Mitigation Map Visualization; and, another column to detail the works proposed to be provided by Sandstone. An additional table titled “Summary of Additional Improvements” has also been included to capture transportation items not included in the TIA. Separately, a proposed Section 219 covenant is outlined to limit development on a portion of the Sandstone lands until such time as suitable improvements to the South Nanaimo transportation network, such as the Fielding / Maki Connector (Mitigation Item #19), have been provided for.

Acronyms used in this document:

NB = northbound SB = northbound EB = eastbound WB = westbound

TABLE 10: VEHICLE INTERSECTION MITIGATION SUMMARY

SCHEDULE A REFERENCE	INTERSECTION	RECOMMENDED MITIGATION PER TIA	TRIGGER / TIMING PER TIA	SANDSTONE PROPOSAL / RESPONSIBILITY
1	Highway 1 / Tenth St / Maki Rd	<p>Add dual NB left turn lane and associated receiving lanes.</p> <p>Extend a SB lane from Tenth Street to Cranberry Road and allow the EB right turn to be free-flow.</p> <p>Separate the EB left turn from eastbound through lane and add dual SB left turn and associated receiving lanes.</p>	<p>Current Conditions (short term)</p> <p>Current Conditions (short term)</p> <p>When Maki-Fielding Connection made</p>	<p>Regional responsibility due to existing and future growth. <i>Sandstone contribution toward improvements allocated toward an increased scope at Highway 1/Cranberry Road.</i></p>
2	Highway 1 / Cranberry Road	<p>Dual NBL and EBL in phases as outlined below*</p> <p><i>*All works per DCC project #75 as detailed in Bylaw No. 7252, dated April 2, 2018</i></p>	<p>Add dual EBL when DA6 complete.</p> <p>Add dual NBL within 5 years of DA6 completion.</p>	<p>Sandstone to complete Stage 1 and 2 works. Timing for such works to be before the earlier of registration of the 50th lot or occupancy of the 50th unit of DA6.</p> <p><i>**street trees and bike lanes to be provided as feasible within the current right of way.</i></p>

SANDSTONE MITIGATION PACKAGE SUMMARY
DRAFTED 2023-SEP-28

SCHEDULE A REFERENCE	INTERSECTION	RECOMMENDED MITIGATION PER TIA	TRIGGER / TIMING PER TIA	SANDSTONE PROPOSAL / RESPONSIBILITY
	Highway 1 / Cranberry Road <i>(continued)</i>	Stage 1: Widen Cranberry Ave approaching Hwy 1 to support dual EB left turns. Relocate hydro poles if required and associated signal changes.		Sandstone to complete Stage 1 and 2 works. Timing for such works to be before the earlier of registration of the 50 th lot or occupancy of the 50 th unit of DA6. <i>(as above)</i>
		Stage 2: Develop a 2/3 lane minor collector with left turn lane at gas station/Moose Hall access. Include concrete curb, gutter and sidewalk, bike lanes in both directions, street trees, and street lighting. Works include widening on Cranberry Road for dual receiving lanes (for northbound lefts from Hwy 1).** The outside (extra) lane will be closed until Stage 3.		
		Stage 3: Widening on Highway 1 for dual NB left turns. Re-striping (opening) closed outside lane from Stage 2.		Stage 3 timing/works to be determined/completed by City/MoTI or others
3	Highway 1 / Cedar Road	Signal timing monitoring and adjustments	Every three years	Sandstone not responsible. Under MOTI's jurisdiction.
		Additional network connectivity for South Nanaimo	Long Term Planning	Sandstone not responsible. Under MOTI's jurisdiction.

SANDSTONE MITIGATION PACKAGE SUMMARY
DRAFTED 2023-SEP-28

SCHEDULE A REFERENCE	INTERSECTION	RECOMMENDED MITIGATION PER TIA	TRIGGER / TIMING PER TIA	SANDSTONE PROPOSAL / RESPONSIBILITY
4	Cedar Road / Sandstone Spine	<p>Signalize with left turn lanes on all approaches (protected/permitted on Cedar)</p> <p>Add eastbound right turn lane. Signal hardware / equipment to be placed in ultimate location (for four laning through intersection).</p> <p>Widen Cedar Road to 4 lanes through intersection.</p> <p>Consider separate westbound right turn over shared through/right lane to encourage use of the Fielding-Maki connection</p>	<p>When DA5 Connects to Cedar Road.</p> <p>Widening to 4 through lanes will depend on timing of connection in relationship to other development areas being constructed. If Sandstone Spine connects early with DA5 then four lanes be required when LOS for the intersection drops below LOS D.</p> <p>When Maki-Fielding connection made</p>	<p>Sandstone to signalize with left turn lanes on all approaches. Sandstone to widen Cedar Road to 4 lanes through intersection.</p> <p>Sandstone to complete widening to 4 through lanes concurrently with the construction of signal.</p> <p>Construction of separate westbound right turn to be completed by others when Maki-Fielding connection made.</p>
5	Cedar Road / Frew Road	Add eastbound left turn on Cedar	When DA1 connects to Frew Road	Yes, full scope.
6	Cedar Road / Development Area 1	Add eastbound left turn on Cedar	When DA1 connects directly to Cedar Road	Yes, full scope.

SANDSTONE MITIGATION PACKAGE SUMMARY
DRAFTED 2023-SEP-28

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7	Cedar Road / Development Area 2	Signalize with left turns on all approaches	When DA2 connects to Cedar Road if no connection to Duke Point Highway for DA2. If DA2 connected to Duke Point Highway timing of signal will depend on amount of development (DA1 and DA2) completed. Prior to connection to Cedar Road for DA2 updated assessment to be undertaken to confirm timing of signalization.	Yes, full scope.
8	Cedar Rd / Harmac Rd	No mitigation required	N/A	N/A
9	Extension Road / Cranberry Road	Roundabout (DCC Project)* <i>*All works eligible for DCC's per DCC project #75 as detailed in Bylaw No. 7252, dated April 2, 2018</i>	Current Conditions	See above, reference 2. Sandstone to complete works before the earlier of registration of the 50 th lot or occupancy of the 50 th unit of DA6.
10	Cranberry Road / Cranberry Connector	Roundabout (DCC Project)	Completed when Cranberry Connector built as part of DCC project.	Sandstone not responsible. Regional improvement, to be constructed as part of the Cranberry Connector project.

SANDSTONE MITIGATION PACKAGE SUMMARY
DRAFTED 2023-SEP-28

SCHEDULE A REFERENCE	INTERSECTION	RECOMMENDED MITIGATION PER TIA	TRIGGER / TIMING PER TIA	SANDSTONE PROPOSAL / RESPONSIBILITY
11	Extension Road / Development Area 6	<p>Stop Control on DA6 leg with SB left turn on Extension Road.</p> <p>Signalize with SB left turn lane on Extension Road. Include appropriate multi-modal crossings.</p>	<p>When DA6 connects to Extension Road.</p> <p>Signalize (or roundabout) when LOS drops below LOS D (estimated at 500 Sandstone doors in DA6).</p>	<p>Sandstone to provide a direct connection to Extension Road (at 1618 Extension Road) before the earlier of the registration of the 50th lot or occupancy of the 50th unit or at the discretion of the Approving Officer.</p> <p>Sandstone to signalize at the earlier of:</p> <ol style="list-style-type: none"> 1) When DA6 connects to Extension Road, or; 2) When the 2 year notice period regarding the roundabout has expired.*** <p>Sandstone to also provide road dedication for a potential future single lane roundabout with a shared multi-use path provided around the circulatory road.</p> <p><i>***City to be provided an opportunity to upgrade the intersection to a roundabout with at least 2 years' notice. Subject to City's decision, timing for installation of signal to be confirmed.</i></p>

SANDSTONE MITIGATION PACKAGE SUMMARY
DRAFTED 2023-SEP-28

				<p>permit application to assess the level of trip generation.</p> <p><u>And</u></p> <p>When the AM EBL reaches 200 vph either connect DA2 road or DA4/DA5 (Sandstone Spine) road to Cedar Road to allow the EBL volumes on Duke Point Highway to reduce / stabilize.</p>
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TABLE 11: NETWORK CONNECTIONS AND CORRIDOR MITIGATION SUMMARY

SCHEDULE A REFERENCE	LOCATION	RECOMMENDED MITIGATION PER TIA	TRIGGER PER TIA	SANDSTONE PROPOSAL / RESPONSIBILITY
13	Cranberry Connector	Connect Cranberry Connector to Tenth	Timing to determined by City / MoTI as this supports reducing volumes on Highway 1 / Tenth / Maki and these volume are already near capacity.	Sandstone not responsible. Regional improvement as contemplated in DCC Project #71
14	Cranberry Road	Upgrade Cranberry Road to three lane cross section and improved pedestrian and bicycle improvements	Timing to determined by City as this is not on the primary / secondary mobility corridor	See above, reference 2. Sandstone to complete works before the earlier of registration of the 50 th lot or occupancy of the 50 th unit of DA6.* <i>*All works eligible for DCC's per DCC project #75 as detailed in Bylaw No. 7252, dated April 2, 2018.</i>
15	Roberta Road E Connection to DA6	Network connectivity to Roberta Road South and East to be determined during permitting phase to avoid adverse vehicle impacts while providing as much active transportation connectivity as possible.	Reviewed during Subdivision / Development Permit stages of project.	Up to, the lesser of, 20 lots registered or occupancy of 20 units to be allowed to connect to Roberta Road E, or as determined with an updated traffic impact assessment and as acceptable to the Approving Officer.
16	Cedar Road (east of Sandstone Spine intersection)	Upgrade to add pedestrian and bicycle facilities	Sandstone frontages as each DA develops. Timing	Sandstone to complete along frontages of Sandstone lands.

SANDSTONE MITIGATION PACKAGE SUMMARY
DRAFTED 2023-SEP-28

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			for completing gaps based on City priorities.	
17	Cedar Road between TCH and Sandstone Spine	Upgrade to four lane cross section	When four (4) lanes required through Cedar Road / Sandstone Spine intersection.	Sandstone to complete concurrently with the construction of the Cedar Road/Sandstone Spine intersection works. Note that no widening of existing bridge/culvert structure to be done.
18	Frew Road to DA1	Connection from DA1 to Frew Road to be constructed to ultimate road width and design within Sandstone lands; however in the interim, limited to emergency vehicles and active transportation modes until such time as the road is widened and suitable for higher traffic volumes.	Gate or other devices to be installed as soon as DA1 connects to Frew Road.	Sandstone to install approved device to limit access.
19	Fielding Road – Maki Road Connection	Align Sandstone Spine to Fielding Road at Cedar Road and connect Fielding Road to Maki Road	Long term.	Sandstone not responsible. Regional responsibility. Also refer to Fielding-Maki Connector Covenant.
20	South End of Nanaimo	Additional Regional Network Connections to be explored such as connecting Cedar Road more directly to Duke Point Highway	On-going	Sandstone not responsible. Regional review.

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DRAFTED 2023-SEP-28

SCHEDULE A REFERENCE	LOCATION	RECOMMENDED MITIGATION PER TIA	TRIGGER PER TIA	SANDSTONE PROPOSAL / RESPONSIBILITY
21	Lenwood / Roberta Road W / McKeown Way Neighbourhood (Extension Road)	<p>New connection from Hosanna Way or Lenwood Road to Development Area 6 intersection.</p> <p>Upgrade Extension Road corridor to have three lane cross section (one lane per direction plus middle lane for left turns or medians) with pedestrian and bicycle improvements</p>	<p>Long term if property available</p> <p>Long term as property and funding available</p>	Sandstone not responsible.

SUMMARY OF ADDITIONAL IMPROVEMENTS

	Location	Improvement	Timing / Trigger
22	Extension Road (Cranberry to DA6)	Provide Active Transportation improvements to accommodate bicycle and pedestrian facilities along the east side of the existing Extension Road right of way, ensuring they are in the ultimate location (based on future middle lane and north side active transportation facilities). Other improvements include: curb, street trees and street lighting as feasible within the existing 20m right-of-way. While some rework to the northbound vehicle travel lane is expected, the general intent is to minimize the impact to that lane on Extension Road. Does not include relocation of the existing railway crossing equipment.	To be completed by Sandstone before the registration of the 50 th lot of DA6.
23	Fielding Multi-Use Trail	Provide improvements to the existing paved Fielding Road ROW between Cedar Road and the Duke Point Highway.	Community Amenity Contribution to be provided as per the terms of the MDA.
24	Cranberry Connector Feasibility Study	Feasibility study of two potential alignments for Cranberry Connector between Cranberry Avenue and Tenth Street. Included environmental assessment, desktop level geotechnical assessment, concept plans and profiles, property acquisition and traffic assessment.	Funded and completed (March 2022) by Sandstone.

Fielding/Maki Connector Covenant:

That a suitably worded covenant be registered to Development Areas 1, 4 and 5, allowing up to a maximum of approximately 45% of the total allowable density/units on these parcels to be developed, or a density/units on Development Areas 1, 2, 4 and 5 that adds 990 vph (PM peak hour) on Cedar Road, until such time as:

- 1) the Fielding/Maki Connector has been constructed, or otherwise “secured” to the satisfaction of the City and MOTI, or;
- 2) Sandstone has provided MOTI and City of Nanaimo with an updated Traffic Impact Assessment showing additional traffic capacity can be accommodated, or;
- 3) the City has made other such arrangements as it relates to improvements to the transportation network in south Nanaimo, to the satisfaction of MoTI, acting reasonably.

For clarity, this does not commit Sandstone to construct the Fielding/Maki Connector

An updated check of actual trips generated by Sandstone on Cedar Road (by counting the turns in/out of Cedar Road/Sandstone Spine, Cedar Road/Frew Road, Cedar Road/DA1 Cedar Road/DA2) by Sandstone should be undertaken with each development permit application to assess the level of trip generation compared to the percentage of the density built (recognizing the City may choose to waive this requirement on individual development permit applications at its sole discretion). By checking the actual trip generation against the projected trip generation, on Cedar Road, it can be determined if more (than the 45%) or less of DA1, DA4, and DA5 could be constructed before triggering the above covenant condition.

To confirm, the purpose of the covenant is to provide the City with a mechanism to monitor the density of the Sandstone project and determine if a City-led initiative to complete the road network per the 2022 City Plan is warranted, prior to approving Sandstone to go beyond the agreed upon 45%.

Schedule A
Mitigation Map Visualization















