

Appendix K

**Project Communication Meetings
Conducted by CPS**

APPENDIX K: PROJECT COMMUNICATION MEETINGS CONDUCTED BY CPS*

DATE	ATTENDEES	SUBJECTS DISCUSSED	LOCATION	CONCERNS	ACCOMMODATIONS / MITIGATIONS
2018-07-18	Chief Administration Officer (CAO) Keith Seymour, Councilor Ricky Johnson, Bob Archibald (CPS), Lowell Jackson, Denelle Bushie (CPS), Bronwyn Weaver (CPS)	Reintroduction of the project to Seymourville	Seymourville	Housing shortage, history of being ignored, need for jobs	Discussed committees for ongoing engagement, executed letter of interest to buy 23 lots in Seymourville for new housing
2018-07-18	Hollow Water First Nation Councilor Henry Moneyas, Bob Archibald (CPS), Lowell Jackson, Denelle Bushie (CPS), Bronwyn Weaver (CPS)	Reintroduction of the Project to Hollow Water First Nation	Hollow Water First Nation	Housing shortage, history of being ignored, need for jobs	discussed committees for ongoing engagement, workforce development strategies, executed letter of interest to buy 23 lots in Seymourville for new housing
2018-08-15	Former Mayor of Manigotagan Art Bostrom, Bronwyn Weaver (CPS), Bob Archibald (CPS)	Reintroduction of the project to Manigotagan	Manigotagan	Need for local job creation	Appreciation for history of local businesses
2018-08-14	Hollow Water First Nation Councilor Henry Moneyas, Denelle Bushie (CPS), Bob Archibald (CPS), Bronwyn Weaver (CPS)	Workforce development and local workforce discussion	Hollow Water First Nation	Long term sustainability of hiring First Nation	Concept of wellness program development
2018-08-15	Hollow Water First Nation Chief Barker, Hollow Water First Nation Councilor Furlon Barker, Hollow Water First Nation Councilor Henry Moneyas, Bob Archibald (CPS), Bronwyn Weaver (CPS), Lowell Jackson, Denelle Bushie (CPS)	Discussion of impact to Hollow Water First Nation	Brokenhead	First Nation Job creation, sharing resource concerns	Workforce development support strategies and training, beginnings of Participation Agreement concepts
2018-08-16	Ken Saunderson, Larry Sourissean (BCN), Bob Archibald (CPS), Bronwyn Weaver (CPS), Denelle Bushie (CPS)	Internet Availability and Regional planning	Winnipeg	Lack of cell service and internet in communities in project area	Agreed to provide upgrade to service to Hollow Water First Nation Band Office and connection to Seymourville administration bldg.
2018-08-21	Seymourville CAO Keith Seymour, Seymourville Mayor Brunelle Sinclair, Charles Simard, Aghaming Mayor Bob Bull, Troy Mercer, Ernie Thomas, Bob Archibald (CPS), Bronwyn Weaver (CPS), Denelle Bushie (CPS)	Industry Training and Employment Services—General Information Meeting	Seymourville	Lack of available training resources	Development of robust CPS training scheme including task training, life skills training, wellness support
2018-08-21	Former Hollow Water First Nation Chief Derek Bushie, Bob Archibald (CPS), Denelle Bushie (CPS), Bronwyn Weaver (CPS)	Tour of Black Island abandoned sand operation w/former Chief (was Chief at the signing of 2014 MOU)	Hollow Water First Nation	Legacy of poor mining practices	Progressive Restoration planning and mindfulness to keep mining footprint small
2018-08-23	Bronwyn Weaver (CPS), Shevon Sinclair	Discussion of Local Issues Re: Hollow Water First Nation	Winnipeg	Environmental concerns from past projects in the region	Appreciation for environmental sensitivities, development of strategies to reduce environmental risk, decided to fully enclose plant and engineer water recycling system
2018-08-23	Ken Saunderson, Larry Sourissean (BCN), Bronwyn Weaver (CPS)	Strategy Discussion Regarding Internet Connectivity for Community	Winnipeg	Lack of cell service and internet in communities in project area	Agreed to provide upgrade to service to Hollow Water First Nation Band Office and connection to Seymourville administration bldg., details finalized
2018-08-28	Seymourville CAO Keith Seymour, Bronwyn Weaver (CPS)	Internet Connectivity, strategic planning	Seymourville	History of other attempts to provide services to community	Appreciation that trust will need to be carefully built, reinforcing need to create working committees for ongoing engagement, CPS committed to include new business development as part of the Participation Agreement
2018-08-29	Seymourville Mayor Brunelle Sinclair, CAO Keith Seymour, Bronwyn Weaver (CPS)	Finalize Building Renovation/Rental and discuss local workforce issues	Seymourville	Commitment to Seymourville	Arrangement to renovate defunct community building to use as temporary CPS office and to donate back to the community. Renovation = \$100K
2018-08-29	Hollow Water First Nation Councilor Henry Moneyas, Bronwyn Weaver (CPS)	Workforce Development and First Nation issues	Hollow Water First Nation	Wellness issues	Development of robust training scheme including task training, life skills training, wellness support
2018-08-29	Cottager Bob Gervais, Bronwyn Weaver (CPS)	Discussion of Cottager issues	Manigotagan	History of other attempts to provide services to community	Development of communications plan to work with cottagers
2018-09-12	Hollow Water First Nation Chief Barker, Councilor Henry Moneyas, Ami Gignac, Bob Archibald (CPS), Bronwyn Weaver (CPS)	Workforce Safety Issues	Hollow Water First Nation	Need for local job creation	Development of training programs emphasizing behavior based safety training

DATE	ATTENDEES	SUBJECTS DISCUSSED	LOCATION	CONCERNS	ACCOMMODATIONS / MITIGATIONS
2018-09-12	Hollow Water First Nation Chief Barker, Councilor Henry Moneyas, Bronwyn Weaver (CPS)	Communications planning	Hollow Water First Nation	Discussion of need to communicate effectively	Development of committees to help transparency and build trust, Committed to include ongoing community committee involvement for the life of the operation in Participation Agreement
2018-09-13	Hollow Water First Nation Chief Barker, Councilor Henry Moneyas, Councilor Furlan Barker, Ami Gignac, Bob Archibald (CPS), Bronwyn Weaver (CPS), Denelle Bushie (CPS)	General Project Parameters, advisory committees discussion	Hollow Water First Nation	Discussion of need to communicate effectively	Development of committees to help transparency and build trust
2018-09-13	Seymourville Mayor Keith Seymour, Bob Archibald (CPS), Bronwyn Weaver (CPS), Denelle Bushie (CPS), Ami Gignac	Workforce development	Seymourville	Wellness issues	Development of robust training scheme including task training, life skills training, wellness support
2018-09-13	Bob Archibald (CPS), Bronwyn Weaver (CPS), Denelle Bushie (CPS)	Open Operations in Pelican Inlet, Manigotagan, MB	Manigotagan	First Temporary Office Opened	Exploration Drilling program begins, retained 12 local individuals for ongoing support of field operations
2018-09-18	Janice Miller, Bob Archibald (CPS), Denelle Bushie (CPS)	Manitoba Infrastructure Motor Carrier Division, RTAC Hauling Fees	Winnipeg	Transportation challenges	Incorporating strategies for road/highway waterway improvements
2018-09-20	Hollow Water First Nation Chief Barker, Councilor Maurice Williams, Councilor Henry Moneyas, Blake York, Bob Archibald (CPS), Bronwyn Weaver (CPS), Denelle Bushie (CPS)	Regional Economic Development Meeting	Brokenhead	Need for local job creation	Development of committee to help support business creation needed to build local economy, Committed to establish an annual fund to support startup businesses in Participation Agreement
2018-09-20	Seymourville CAO Keith Seymour, Joshua Seymour, Bronwyn Weaver (CPS)	Workforce Development	Seymourville	Need for local job creation	Development of training programs emphasizing behavior based safety training
2018-09-26	Jay Cranney, Jack Lazarek (Cando), Bronwyn Weaver (CPS), Denelle Bushie (CPS), Bob Archibald (CPS)	Transportation strategy	Winnipeg	Community relations as applicable to the proposed transload facilities	Location chosen to minimize community impact
2018-09-27	Hollow Water First Nation Chief Barker, Councilor Henry Moneyas, Bronwyn Weaver (CPS)	Arrangements for meeting with Elders	Hollow Water	Concerns for the Elders	Creation of the Elders Committee to obtain ongoing wisdom and guidance, Committed to include regular Elder's meetings for the life of the operation in the Participation Agreement
2018-10-03	11 Hollow Water First Nation Elders, Councilor Maurice Williams, Councilor Henry Moneyas, Bob Archibald (CPS), Bronwyn Weaver (CPS), Ami Gignac, Kelly Hambly, Katie Woodhall, Denelle Bushie (CPS)	Presentation of Proposed Project to Elders	Hollow Water	Environmental concerns from past projects in the region, need for jobs	Pledged transparency to the Elders and hopes to build trust CPD included an additional re-design and capital expenditure to the plant to maximize wastewater capture for plant makeup water
2018-10-05	Glenn Leroix, Bob Archibald (CPS)	Local influencer for Lac du Bonnet	Lac du Bonnet	Regional history	Appreciation for history of local businesses
2018-10-10	Hollow Water First Nation Chief Barker, Councilor Maurice Williams, Councilor Henry Moneyas, Robert Archibald, Bronwyn Weaver (CPS)	Participation Agreement	Hollow Water	Need for formal agreement	Outline developed for Participation Agreement based on 2014 MOU
2018-10-12	AECOM Terrestrial Field Study with Elder, Denelle Bushie (CPS), AECOM staff	Identification of medicinal plants	Proposed Site	Restoration Program	Need for restoration to include planting of medicinal plants
2018-10-24	Seymourville CAO Keith Seymour, Mayor Brunelle Sinclair, Bronwyn Weaver (CPS)	Workforce development issues	Seymourville	Environmental concerns from past projects in the region	Appreciation for environmental sensitivities, development of strategies to reduce environmental risk such as enclosing plant and recycling water system, CPS refined engineering design to include an additional system to further capture plant evaporation and ground water encountered during mining to reduce makeup water requirements
2018-10-25	TEK meeting with the Hollow Water First Nation Elders	Traditional knowledge of the proposed site	Hollow Water	Environmental concerns from past projects in the region	Appreciation for environmental sensitivities, development of strategies to reduce environmental risk such as enclosing plant and recycling water system
2018-10-26	Seymourville CAO Keith Seymour, Bronwyn Weaver (CPS)	Local Community Issues	Seymourville	Discussion of need to communicate effectively	Development of committees to help transparency and build trust

DATE	ATTENDEES	SUBJECTS DISCUSSED	LOCATION	CONCERNS	ACCOMMODATIONS / MITIGATIONS
2018-10-28	Cottagers Gail and Brian Gagne , Bronwyn Weaver (CPS)	Project Information	Seymourville	Environmental concerns from past projects in the region	Appreciation for environmental sensitivities, development of strategies to reduce environmental risk such as enclosing plant and recycling water system
2018-10-30	Hollow Water First Nation Chief Barker, Councilor Maurice Williams, Councilor Henry Moneyas, Councilor Jeff Bushie, Denelle Bushie (CPS), Shevon Sinclair, Bob Archibald (CPS), Bronwyn Weaver (CPS)	Meeting to discuss terms of the Participation Agreement	Winnipeg	Formalizing concepts	Finalizing details regarding resource sharing, job creation, development of committees
2018-11-03	Seymourville and Manigotagan Public Meeting (75 in attendance)	Presentation and Poster Display	Seymourville	Environmental concerns from past projects in the region, need for jobs	Laying out the project plans such committee development, enclosing the plant, recycling water in plant, the need for transparency and good communications, need to avoid obtaining or discharging water into Lake Winnipeg
2018-11-06	9 Hollow Water First Nation Elders, Hollow Water First Nation Chief Barker, Councilor Henry Moneyas, Councilor Jeff Bushie, Bob Archibald (CPS), Bronwyn Weaver (CPS), Shavon Sinclair, Denelle Bushie (CPS)	Draft Participation Agreement	Hollow Water	Environmental concerns from past projects in the region, need for jobs, resource sharing	Laying out the project plans such committee development, enclosing the plant, recycling water in plant, the need for transparency and good communications, need to avoid obtaining or discharging water into Lake Winnipeg, Finalizing details regarding resource sharing, job creation, development of committees
2018-11-06	Hollow Water First Nation Band Meeting	Presentation and Poster Display	Hollow Water	Environmental concerns from past projects in the region, need for jobs	Laying out the project plans such committee development, enclosing the plant, recycling water in plant, the need for transparency and good communications, need to avoid obtaining or discharging water into Lake Winnipeg
2018-11-08	Manigotagan CAO Tiffany Yarmie	Informational meeting about project	Manigotagan	Housing shortage, history of being ignored, need for jobs	discussed committees for ongoing engagement, workforce development strategies
2018-11-08	Paul and Marilyn McNish	Meeting with Manigotagan residents	Manigotagan	Housing shortage, history of being ignored, need for jobs	discussed committees for ongoing engagement, workforce development strategies
2018-11-11	Manigotagan Memorial Service	Event at Manigotagan and Hall—general discussion of Project	Manigotagan	History of other attempts to provide services to community	Appreciation of the ties in the community, the need for transparency and building trust
2018-11-13	Ian Cramer, Tom Thoranson, Fabian Sanderson, Destiny Williams, Bob Archibald (CPS), Bronwyn Weaver (CPS)	First Peoples Economic Growth Fund - Resources available through FPEGF	Winnipeg	Business development strategies	Creation of a dedicated committee for business development guidance and to determine support strategies
2018-11-14	Manigotagan Council Mayor Dale Boulette, Councilor Sally Dear, Councilor Helen Thomas, CAO Tiffany Yarmie, Bronwyn Weaver (CPS) Denelle Bushie (CPS), Derek Bushie, Bob Archibald (CPS), Bronwyn Weaver (CPS)	Presentation and Posters to Manigotagan Council	Manigotagan	Environmental concerns from past projects in the region, need for jobs	Laying out the project plans such committee development, enclosing the plant, recycling water in plant, the need for transparency and good communications, need to avoid obtaining or discharging water into Lake Winnipeg
2018-11-15	Seymourville Audrey Seymour, Councilor Wesley Simard, CAO Keith Seymour, Councilor Taira Seymour, Bob Archibald (CPS), Bronwyn Weaver (CPS)	Presentation to new mayor and Council of Seymourville	Seymourville	Environmental concerns from past projects in the region, need for jobs	Laying out the project plans such committee development, enclosing the plant, recycling water in plant, the need for transparency and good communications, need to avoid obtaining or discharging water into Lake Winnipeg
2018-11-21	Hollow Water First Nation Chief Barker, Councilor Henry Moneyas, Councilor Maurice Williams, Councilor Jeff Bushie, Bob Archibald (CPS), Bronwyn Weaver (CPS)	Participation Agreement Discussion	Winnipeg	Formalizing concepts	Finalizing details regarding resource sharing, job creation, development of committees
2018-11-22	Hollow Water First Nation Chief Barker, Councilor Henry Moneyas, Councilor Maurice Williams, Councilor Jeff Bushie, Bob Archibald (CPS), Bronwyn Weaver (CPS)	Finalization of Participation Agreement	Brokenhead	Formalizing concepts	Finalizing details regarding resource sharing, job creation, development of committees

DATE	ATTENDEES	SUBJECTS DISCUSSED	LOCATION	CONCERNS	ACCOMMODATIONS / MITIGATIONS
2018-11-22	Seymourville Audrey Seymour, Councilor Wesley Simard, CAO Keith Seymour, Councilor Taira Seymour, Bob Archibald (CPS), Bronwyn Weaver (CPS)	Meeting to discuss Participation Agreement	Seymourville	Formalizing concepts	Finalizing details regarding resource sharing, job creation, development of committees
2018-11-26	Seymourville Audrey Seymour, Councilor Wesley Simard, CAO Keith Seymour, Councilor Taira Seymour, Bob Archibald (CPS), Bronwyn Weaver (CPS)	Participation Agreement details	Seymourville	Formalizing concepts	Finalizing details regarding resource sharing, job creation, development of committees
2018-11-26	Wanipigow Leaders Summit—Larry Barker (Hollow Water First Nation Chief), Furlon Barker (Hollow Water First Nation Councilor), Henry Moneyas (Hollow Water First Nation Councilor), Maurice Williams (Hollow Water First Nation Councilor), Audrey Seymour (Seymourville Mayor), Wesley Simard (Seymourville Councilor), Ricky Johnstone (Seymourville Councilor), Taira Seymour (Seymourville Councilor), Keith Seymour (Seymourville CAO), Robert Bull (Aghaming Mayor), Dale Boulette (Manigotagan Mayor), Roland Meade (Manigotagan Councilor), Jenny Prest (Manigotagan Councilor), Helen Thomas (Manigotagan Councilor), Sally Dear (Manigotagan Councilor), Tiffany Yarmie (Manigotagan CAO) Audrey Seymour (Seymourville Mayor), Wesley Simard (Seymourville Councilor), Ricky Johnstone (Seymourville Councilor), Taira Seymour (Seymourville Councilor), Robert Archibald, Bronwyn Weaver (CPS), Denelle Bushie (CPS), Derek Bushie	Project Information and regional business development planning	Seymourville	Concerns over lost opportunities due to not working collectively, old rivalries	Formation of a Regional Leadership Committee made up of all elected officials from Hollow Water First Nation, Seymourville, Manigotagan and Aghaming. The priority of this committee will be to lay out planning initiatives and create business growth vision.
2018-11-16	Hollow Water First Nation Councilor Henry Moneyas, Bronwyn Weaver (CPS)	Workforce Development issues	Seymourville	Hiring practice concerns	Plans made regarding hiring recommendations
2018-12-05	Manigotagan Community	Project information	Manigotagan	Environmental concerns from past projects in the region, need for jobs	Laying out the project plans such committee development, enclosing the plant, recycling water in plant, the need for transparency and good communications, need to avoid obtaining or discharging water into Lake Winnipeg
2018-11-19	Trapper and Manigotagan community resident Charles Simard, Bob Archibald (CPS)	Scholarships for Trappers	Seymourville	Need to nurture traditional trapping knowledge	Scholarship funds matched with Manitoba Hydro to teach 12 youth trapping, need for ongoing initiatives in community
2018-12-03	Dale Boulette (Manigotagan Mayor), Roland Meade (Manigotagan Councilor), Jenny Prest (Manigotagan Councilor), Helen Thomas (Manigotagan Councilor), Sally Dear (Manigotagan Councilor), Tiffany Yarmie (Manigotagan CAO), Bronwyn Weaver (CPS), Bob Archibald (CPS)	Project Details, Planning for Participation Agreement	Manigotagan	Concerns over history of being slighted by other communities	Need for a Participation Agreement that details regarding resource sharing, job creation, development of committees.
2018-12-05	Planning Session for Elders Meeting, Shavon Sinclair, Bronwyn Weaver (CPS)	Presentation information	Winnipeg	Concerns for the Elders	Details added to structure, strategy to reach all Elders in the community
2018-12-01	Hollow Water Elder Yvonne Barker, Bronwyn Weaver (CPS)	Project discussion and restoration ideas	Manigotagan	Lack of growing food knowledge in the communities	Need to involve CPS to support Elders work at the Wanipigow School and planning for restoration concepts that address agricultural production
2018-12-07	Seymourville CAO Keith Seymour, Bronwyn Weaver (CPS)	Participation Agreement	Seymourville	Need to mesh agreement details with existing zoning and codes	Need for larger planning initiative to plan for increase to population in Seymourville, CPS will play key role to support additional infrastructure

DATE	ATTENDEES	SUBJECTS DISCUSSED	LOCATION	CONCERNS	ACCOMMODATIONS / MITIGATIONS
2018-12-07	Hollow Water First Nation Chief Barker, Bronwyn Weaver (CPS)	Project and Community Communications	Winnipeg	Guidance on communications	CPS to support communications of technical project details and provide support and technology
2018-12-06	Hollow Water First Nation Councilor Furlon Barker, Bob Archibald (CPS)	Participation Agreement details	Seymourville	Formalizing concepts	Finalizing details regarding resource sharing, job creation, development of committees
2018-12-08	Council Member Furlon Barker, Bob Archibald (CPS)	Participation Agreement details	Seymourville	Formalizing concepts	Finalizing details regarding resource sharing, job creation, development of committees
2018-12-10	Council Member Furlon Barker, Bob Archibald (CPS)	Participation Agreement details	Seymourville	Formalizing concepts	Finalizing details regarding resource sharing, job creation, development of committees
2018-12-10	Hollow Water First Nation Chief Barker, Bronwyn Weaver (CPS)	Project and Community Communications	Winnipeg	Guidance on communications	CPS to support communications of technical project details and provide support and technology
2018-12-11	Hollow Water First Nation Chief Barker, Bronwyn Weaver (CPS)	Project and Community Communications	Winnipeg	Guidance on communications	CPS to support communications of technical project details and provide support and technology
2018-12-12	Hollow Water First Nation Chief Barker, Bronwyn Weaver (CPS)	Project and Community Communications	Seymourville	Guidance on communications	CPS to support communications of technical project details and provide support and technology
2018-12-12	Aghaming Mayor Bob Bull, Bronwyn Weaver (CPS)	Project Details	Seymourville	Environmental concerns from past projects in the region, need for jobs	Laying out the project plans such committee development, enclosing the plant, recycling water in plant, the need for transparency and good communications, need to avoid obtaining or discharging water into Lake Winnipeg
2018-12-12	Hollow Water First Nation Elders, Larry Barker (Hollow Water First Nation Chief), Furlon Barker (Hollow Water First Nation Councilor), Henry Moneyas (Hollow Water First Nation Councilor), Maurice Williams (Hollow Water First Nation Councilor), Shavon Sinclair, Denelle Bushie (CPS), Derek Bushie (Former Hollow Water First Nation Chief), Bronwyn Weaver (CPS), Bob Archibald (CPS)	Hollow Water First Nation Elders Meeting	Seymourville	Formalizing concepts and addressing project details	Introduction and details from the President of TPS—the company that will be building the processing plant of Plant Contruction Company (TPS)
2018-12-12	Manigotagan Councilor Roland Wood, Councilor Sally Dear, Councilor Jenny Prest, Councilor Helen Thomas, Tiffany Yarmie (Manigotagan CAO), Bronwyn Weaver (CPS)	Participation Agreement Details	Manigotagan	Formalizing concepts	Finalizing details regarding resource sharing, job creation, development of committees
12/1218	John Cross (TPS), CPS Staff	Final Plant design, logistics, hiring, training plans, project schedule, environmental protection	Seymourville	Permitting Schedule, Capital Budget Update	Workforce Development strategy finalized, engineering environmental mitigation plans discussed, Workforce training schedule discussed

*Candian Premium Sand Inc. (CPS) Meetings Regarding Community Relations does not include multiple community meetings held in 2014 that resulted in a signed Memorandum of Understanding (MOU) with Hollow Water First Nation and ultimately the Letters of Support from the communities of Seymourville, Manigotagan and Aghaming.

Appendix L

Letters of Support



Seymourville Community Council

P.O. Box 2568, Wanipigow, Manitoba R0E 2E0 Phone: (204) 363-7246

Fax: (204) 363-7581

December 10, 2018

TO: Whom it May Concern


RE: Seymourville - Support for the Wanipigow Sand Project


We have engaged in direct and productive meetings with Canadian Premium Sand, regarding its planned Wanipigow Sand Project, which is to be located within the boundaries of the Incorporated Community of Seymourville. Officials from Canadian Premium Sand have also met and engaged with our administration and community members, answering their direct questions and explaining intended operations of the Wanipigow Sand Project.

As the duly elected government of Seymourville, representing all the residents of Seymourville, we offer our full support of this important project and look forward to solidifying a formal working relationship and economic benefit plan shortly with Canadian Premium Sand that will positively impact both our community and its members. Our support does not constitute to financial commitments nor commitments to fund capital infrastructure within the community.


We understand that plans are underway to submit all the needed requirements for environmental licensing and that a formal community consultation process with Manitoba on the Wanipigow Sand Project will begin shortly. Community leaders from Hollow Water First Nation, the Incorporated Community of Seymourville, and the Community of Manigotagan have been in discussions with Canadian Premium Sand since July 2018. We recently all met together and shared our desire to work collaboratively with Canadian Premium Sand, to maximize opportunities for our communities and our respective residents. We encourage Manitoba to proceed with all necessary consultations and licensing processes as quickly as possible so that the benefits of this Project can begin to flow to our communities.


Mayor – Audrey Seymour


Councillor – Wesley Simard


Councillor – Chantel Seymour


Councillor – Taira Seymour


Councillor – Rick Johnstone

MANIGOTAGAN COMMUNITY COUNCIL

General Delivery, Manigotagan, MB. R0E 1E0
Phone 204-363-7375 Fax 204-363-7346
Email: manigo_cc@outlook.com

TO: Whom it May Concern

RE: Community of Manigotagan - Support for the Wanipigow Sand Project

DATE: December 5th, 2018

We have engaged in direct and productive meetings with Canadian Premium Sand, regarding its planned Wanipigow Sand Project, which will be located near the Community of Manigotagan. Officials from Canadian Premium Sand have also met and engaged with our administration and community members, answering their direct questions and explaining intended operations of the Wanipigow Sand Project.

As the duly elected government of Manigotagan, representing all the residents of Manigotagan, we offer our full support of this important project, and look forward to solidifying a formal working relationship and economic benefit plan shortly, with Canadian Premium Sand, that will positively impact both our community and its members.

We understand that plans are underway to submit all the needed requirements for environmental licensing and that a formal community consultation process with Manitoba on the Wanipigow Sand Project will begin shortly. Community leaders from Hollow Water First Nation, the Incorporated Community of Seymourville, and the Community of Manigotagan have been in discussions with Canadian Premium Sand since July 2018. We recently all met together and shared our desire to work collaboratively with Canadian Premium Sand, to maximize opportunities for our communities and our respective residents. We encourage Manitoba to proceed with all necessary consultations and licensing processes as quickly as possible so that the benefits of this Project can begin to flow to our communities.

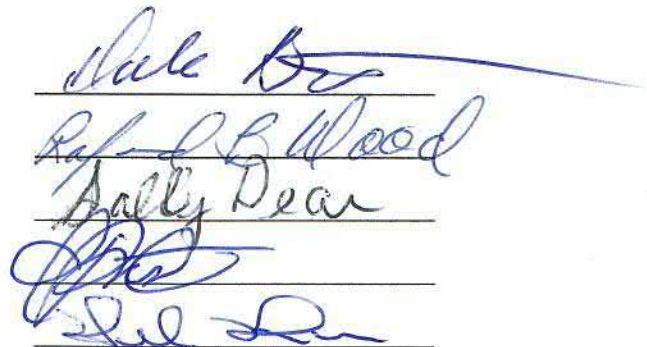
Mayor – Dale Boulette

Councillor – Roland Wood

Councillor – Sally Dear

Councillor – Jenny Prest

Councillor – Helen Thomas



Aghaming Community

P.O. Box 2564
Wanipigow, Manitoba
204-363-7212

TO: Whom it May Concern

RE: Aghaming Community- Support for the Wanipigow Sand Project

DATE: December 11, 2018

We have engaged in direct and productive meetings with Canadian Premium Sand, regarding its planned Wanipigow Sand Project, which will be located near Seymourville. Officials from Canadian Premium Sand have also met and engaged with our administration and community members, answering their direct questions and explaining intended operations of the Wanipigow Sand Project.

As the duly elected government of the Aghaming Community, representing all the residents of Aghaming, we offer our full support of this important project.

We understand that plans are underway to submit all the needed requirements for environmental licensing and that a formal community consultation process with Manitoba on the Wanipigow Sand Project will begin shortly. Community leaders from Hollow Water First Nation, the Incorporated Community of Seymourville, the Community of Manigotagan and the Aghaming Community have been in discussions with Canadian Premium Sand since July 2018. We recently all met together and shared our desire to work collaboratively with Canadian Premium Sand, to maximize opportunities for our communities and our respective residents. We encourage Manitoba to proceed with all necessary consultations and licensing processes as quickly as possible so that the benefits of this Project can begin to flow to our communities.

Mayor – Bob Bull



THE INCORPORATED COMMUNITY OF SEYMOURVILLE, a Manitoba based incorporated community, pursuant to *The Northern Affairs Act*, having boundaries as set out in Manitoba Director of Surveys Plan 19311,

August 30, 2018

TO: Manitoba Conservation and Water Stewardship District Office

and

TO: Whom it May Concern

RE: Work Permit Application by Claim Post Resources Inc., August 2018, for sonic drilling and sampling program work, pursuant to s. 7(1)(c) of *The Crowns Lands Act*; and s. 23(1) of *The Wildfires Act*.

Please be advised we have recently re-affirmed our Memorandum of Understanding with Claim Post Resources Inc. ("**Claim Post**"), and are in support of Claim Post's Work Permit Application attached as Schedule "**A**" to this letter (the "**Application**").

The Application relates to a proposed Sonic Drill and Sampling Program on Crown lands subject to quarry leases, where such leases are currently held by Claim Post, or are pending transfer to Claim Post. We understand that the existing access road will be used as much as feasible to access the proposed 74 drill hole locations, and a cut line will only be used where necessary, in order to minimize environmental disturbance.

We ask respectfully that Manitoba Conservation and Water Stewardship District Office approve the Application, so that economic benefits related to the Seymourville Silica Sand Project might flow to our local communities. We waive right to any Crown consultation we might otherwise be entitled to regarding to this *specific* Application.

THE INCORPORATED COMMUNITY OF SEYMOURVILLE

Per: Bernel Helgason
Bernel Helgason, Mayor

Noreen Seymour
Councillor Noreen Seymour

Lorina Seymour
Councillor Lorina Seymour

Rick Johnstone
Councillor Rick Johnstone

Tara Seymour
Councillor Tara Seymour

HOLLOW WATER FIRST NATION

September 1, 2018

TO: Manitoba Conservation and Water Stewardship District Office

and

TO: Whom it May Concern

RE: Work Permit Application by Claim Post Resources Inc., September 2018, for Right of Way and Plant Location Geotechnical Investigations, pursuant to s. 7(1)(c) of *The Crowns Lands Act*; and s. 23(1) of *The Wildfires Act*.

Please be advised we have recently re-affirmed our Memorandum of Understanding with Claim Post Resources Inc. ("**Claim Post**"), and are in support of Claim Post's Work Permit Application attached as Schedule "A" to this letter (the "**Application**").

The Application relates to a proposed Sonic Drill and Investigation Program on Crown lands subject to quarry leases, where such leases are currently held by Claim Post, or are pending transfer to Claim Post. We understand that Claim Post needs to do testing to determine an appropriate access road configuration, to minimize environmental disturbance, and the best plant siting. We understand that the existing access road will be used as much as feasible to access the proposed drill hole locations, and a cut line will only be used where necessary, in order to minimize environmental disturbance.

We ask respectfully that Manitoba Conservation and Water Stewardship District Office approve the Application, so that economic benefits related to the Seymourville Silica Sand Project might flow to our local communities. We waive right to any Crown consultation we might otherwise be entitled to regarding to this specific Application.

HOLLOW WATER FIRST NATION

Per: 

Chief Larry Barker

Per: 

Councillor Leslie Williams

Per: 

Councillor Furlon Barker

Per: 

Councillor Henry (Ainch) Moneyas

Per: 

Councillor Geoffry Bushie

THE INCORPORATED COMMUNITY OF SEYMOURVILLE, a Manitoba based incorporated community, pursuant to *The Northern Affairs Act*, having boundaries as set out in Manitoba Director of Surveys Plan 19311,

September 1, 2018

TO: Manitoba Conservation and Water Stewardship District Office

and

TO: Whom it May Concern

RE: Work Permit Application by Claim Post Resources Inc., September 2018, for Right of Way and Plant Location Geotechnical Investigations, pursuant to s. 7(1)(c) of *The Crowns Lands Act*; and s. 23(1) of *The Wildfires Act*.

Please be advised we have recently re-affirmed our Memorandum of Understanding with Claim Post Resources Inc. ("**Claim Post**"), and are in support of Claim Post's Work Permit Application attached as Schedule "A" to this letter (the "**Application**").

The Application relates to a proposed Sonic Drill and Investigation Program on Crown lands subject to quarry leases, where such leases are currently held by Claim Post, or are pending transfer to Claim Post. We understand that Claim Post needs to do testing to determine an appropriate access road configuration, to minimize environmental disturbance, and the best plant siting. We understand that the existing access road will be used as much as feasible to access the proposed drill hole locations, and a cut line will only be used where necessary, in order to minimize environmental disturbance.

We ask respectfully that Manitoba Conservation and Water Stewardship District Office approve the Application, so that economic benefits related to the Seymourville Silica Sand Project might flow to our local communities. We waive right to any Crown consultation we might otherwise be entitled to regarding to this *specific* Application.

THE INCORPORATED COMMUNITY OF SEYMOURVILLE

Per:

Bernel Helgason
Bernel Helgason, Mayor

Noreen Seymour
Councillor Noreen Seymour

Lorina Seymour
Councillor Lorina Seymour

Councillor Rick Johnstone

Tara Seymour
Councillor Tara Seymour

Appendix M

**Hollow Water First Nation Economic
Participation Agreement Notices**



P.O. BOX 2561, WANIPIGOW, MANITOBA R0E 2E0

TELEPHONE: (204) 363-7278 / 363-7215 / 363-7302 / 363-7336
FAX: (204) 363-7418

December 6, 2018

TO: Manitoba Department of Sustainable Development

and

TO: Whom it May Concern

Re: Economic Participation Agreement among Canadian Premium Sand Inc. and Hollow Water First Nation, dated November 22, 2018 for Wanipigow Sand Project, and Use of Hollow Water First Nation's Home Block


Please be advised Hollow Water First Nation has recently entered into an Economic Partnership Agreement with Canadian Premium Sand Inc., dated November 22, 2018, dealing with economic participation and social, employment, and business development initiatives that will provide substantial benefits to our community and its members in the years to come.

We have worked closely with the leaders of Canadian Premium Sand to gain a clear understanding of the areas that the Wanipigow Sand Project will impact, and have determined that all activities will take place in what Canadian Premium Sand calls their "Operations Area". The Operations Area is within Hollow Water First Nation's Home Block, which is a central part of the traditional lands we have historically used and managed for our own purposes. If other Indigenous people want to come into our Home Block lands and use resources from those lands they must first ask our permission.

No other First Nations or Metis peoples have asked for our permission to use our Home Block lands, and we have not given any other community or people permissions to use our Home Block lands. We hope this explanation makes it clear that we have always and will continue to assert management over our traditional lands, and that there are no other Indigenous groups using our Home Block lands.

We respectfully ask that Manitoba Department of Sustainable Development issue the necessary *Environmental Act* licence so that the economic benefits of the Wanipigow Sand Project might flow to our local communities.

HOLLOW WATER FIRST NATION



Chief Larry Barker

cc. B. Archibald, Canadian Premium Sand



Source: *Canadian Premium Sand Inc.*

November 29, 2018 18:01 ET

Canadian Premium Sand Inc. Enters Into Economic Participation Agreement With Hollow Water First Nation

CALGARY, Alberta, Nov. 29, 2018 (GLOBE NEWSWIRE) -- **Canadian Premium Sand Inc. (TSXV: CPS)** ("**CPS**" or the "**Company**") is pleased to announce today that it has entered into an Economic Participation Agreement (the "**Participation Agreement**") with Hollow Water First Nation ("**Hollow Water**") for the Company's Wanipigow Silica Sand Extraction Project (the "**Wanipigow Sand Project**") near Seymourville, Manitoba.

The Participation Agreement reflects each party's commitment and support to advancing the Wanipigow Sand Project, and provides various economic and social benefits and opportunities, including employment, contracting and training initiatives. The term of the Participation Agreement is for the life of the Wanipigow Sand Project.

The Council of Hollow Water First Nation has publicly stated: "We have listened to our elders, our community members, our environmental advisors, and our local neighbors. We have the mandate of our people to move forward in economic partnership with Canadian Premium Sand to build a prosperous future for our people in a way that protects and respects the lands we share, for the next 50 years and beyond."

"We are honored to have our Wanipigow Sand Project move forward in partnership with the community of Hollow Water and highly value the support, input and guidance that local communities will bring to the project. We look forward to working together to enhance social and economic prosperity to Hollow Water and other local communities. Our Board and management would like to express our appreciation to the Chief, Councillors, Elders and community members for their courage and openness in helping to build trust and understanding of our respective goals and interests," stated Lowell Jackson, Executive Chairman.

Additionally, the parties will establish several integrated committees, each with a specific mandate, to ensure there is continuous and direct dialogue between the parties on: permitting matters, environmental monitoring, employment and procurement opportunities, and managing the Participation Agreement itself.

Wanipigow Sand Project

The Wanipigow Sand Project is the development of a world class, completely enclosed, silica sand processing plant which will operate year-round. Silica sand will be extracted and moved to the plant where it will be washed, dried, screened for size and then transported to market. The silica sand in the operation area is a high-purity quartz that is extremely durable and has very round, uniform grains. This high quality allows for a broad range of uses including glassmaking, metal casting and

production, paint and coatings, ceramics and refractories, water filtration and oil and gas recovery. The Company anticipates that the Wanipigow Sand Project will provide a significant number of local jobs for more than 50 years.

This silica sand deposit on the eastern side of Lake Winnipeg, sits on top of bedrock which is more than 10 meters above the level of the lake. The Wanipigow Sand Project will have no anticipated effects on local sand beaches or the local water table or community wells. More specifically, the well water used in the processing plant will be recycled with no use of chemicals in cleaning the sand. Further, no water used in the processing plant will come from Lake Winnipeg, nor will there be water discharged into the lake.

The Wanipigow Sand Project is located approximately 200 km northeast of Winnipeg within the community of Seymourville and adjacent to the Hollow Water community. The Company owns the quarry leases for the Wanipigow Sand Project.

For further information and presentation material, please review the Company's website at www.canadianpremiumsand.com

Forward-looking Statements

Certain statements in this press release relating to the Company's Wanipigow Sand Project and the Participation Agreement and the anticipated benefits to be derived therefrom for the Company and local communities, the Company's business plans as well as the anticipated environmental impact of the Wanipigow Sand Project are "forward-looking statements" within the meaning of securities legislation. The Company does not intend, and does not assume any obligation, to update these forward-looking statements. These forward-looking statements represent management's best judgment based on current facts and assumptions that management considers reasonable. The Company makes no representation that reasonable business people in possession of the same information would reach the same conclusions. Forward-looking statements involve known and unknown risks, uncertainties and other factors which may cause the actual results, performance or achievements of the Company to be materially different from any future results, performance or achievements expressed or implied by the forward-looking statements. In particular, fluctuations in the demand for silica sand and cost overruns relating to the development of the Wanipigow Sand Project could prevent the Company from achieving its targets. Readers should not place undue reliance on forward-looking statements. More information about risks and uncertainties affecting the Company and its business is available in the Company's filings which are posted on SEDAR at www.sedar.com.

About Canadian Premium Sand Inc.

CPS is a Canadian silica resource development and production company. It is currently developing an industrial silica sand deposit at Seymourville, Manitoba. Its shares trade on the TSX Venture Exchange under the symbol "CPS".

Neither TSX Venture Exchange nor its Regulation Services Provider (as that term is defined in the policies of the TSX Venture Exchange) accepts responsibility for the adequacy or accuracy of this press release.

CONTACT INFORMATION:

Canadian Premium Sand Inc.

Lowell Jackson

Executive Chairman and Director

403-660-3702

www.canadianpremiumsand.com

Appendix N

Traffic Assessment Report

Canadian Premium Sand Inc.

Wanipigow Sand Extraction Project Traffic Impact Study

Prepared by:

AECOM Canada Ltd.
99 Commerce Drive
Winnipeg, MB R3P 0Y7
Canada

T: 204 477 5381
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www.aecom.com

Prepared for:

Canadian Premium Sand Inc.
Box 2315 8 Subdivision Road
Wanipigow, MB
R0E 2E0

Date: November 2018

Project #: 60588114

Distribution List

# Hard Copies	PDF Required	Association / Company Name
	✓	Canadian Premium Sand Inc. Ltd.
	✓	AECOM Canada Ltd.

Revision History

Rev #	Date	Revised By:	Revision Description

Marlene Gifford
AECOM Canada Ltd.
for
Canadian Premium Sand Inc.
Box 2315 8 Subdivision Road
Wanipigow, MB
R0E 2E0

November 23, 2018

Project #
60588114

Dear Ms. Gifford:

**Subject: Wanipigow Sand Extraction Project
Traffic Impact Study**

We are pleased to provide you with the draft Traffic Impact Study for the Wanipigow Sand Extraction Project in the area of Wanipigow, located in south-eastern Manitoba approximately 150 km northeast of Winnipeg off of Provincial Road 304 (PR304).

If you have any question on this report, please contact the undersigned at 204-928-8429.

Sincerely,
AECOM Canada Ltd.



James McCutcheon
Manager, Transportation, Manitoba

JM:dlh
Encl.
cc:

Statement of Qualifications and Limitations

The attached Report (the "Report") has been prepared by AECOM Canada Ltd. ("AECOM") for the benefit of the Client ("Client") in accordance with the agreement between AECOM and Client, including the scope of work detailed therein (the "Agreement").

The information, data, recommendations and conclusions contained in the Report (collectively, the "Information"):

- is subject to the scope, schedule, and other constraints and limitations in the Agreement and the qualifications contained in the Report (the "Limitations");
- represents AECOM's professional judgement in light of the Limitations and industry standards for the preparation of similar reports;
- may be based on information provided to AECOM which has not been independently verified;
- has not been updated since the date of issuance of the Report and its accuracy is limited to the time period and circumstances in which it was collected, processed, made or issued;
- must be read as a whole and sections thereof should not be read out of such context;
- was prepared for the specific purposes described in the Report and the Agreement; and;
- in the case of subsurface, environmental or geotechnical conditions, may be based on limited testing and on the assumption that such conditions are uniform and not variable either geographically or over time.

AECOM shall be entitled to rely upon the accuracy and completeness of information that was provided to it and has no obligation to update such information. AECOM accepts no responsibility for any events or circumstances that may have occurred since the date on which the Report was prepared and, in the case of subsurface, environmental or geotechnical conditions, is not responsible for any variability in such conditions, geographically or over time.

AECOM agrees that the Report represents its professional judgement as described above and that the Information has been prepared for the specific purpose and use described in the Report and the Agreement, but AECOM makes no other representations, or any guarantees or warranties whatsoever, whether express or implied, with respect to the Report, the Information or any part thereof.

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This Statement of Qualifications and Limitations is attached to and forms part of the Report and any use of the Report is subject to the terms hereof.

AECOM: 2015-04-13

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Appendix D.	Synchro Analysis
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1. Study Purpose and Objectives

AECOM Canada Ltd. ("AECOM"), was retained by Canadian Premium Sand Inc. ("CPSI"), to conduct a Traffic Impact Study ("TIS") for a proposed silica sand extraction project ("Project").

The purpose of this report is to utilize projected traffic volumes generated by the proposed operations at the site and to determine its potential traffic impacts upon the adjacent highway network. The objective is to determine what measures if any may be required to mitigate adverse impacts to the Level of Service ("LOS") of the highway network.

The study was conducted according to the following methodology:

- Conduct a review of the site operations plan for the Project and identify the critical intersections along the haul route from the site to PR304 near Manigotagan, Manitoba;
- Collect available traffic data at key intersections within the study area;
- Collect details of the existing roadway and intersection geometry, lane configuration, traffic control and other relevant information;
- Assess existing operational capacity and Level of Service (LOS) at the key intersections in the study area;
- Estimate newly generated trips at full build-out of the proposed site to a ten (10) year design horizon;
- Project full buildout traffic during the peak hour at the key intersections by combining site-generated traffic and background traffic on the road;
- Conduct capacity and LOS analysis for the full buildout ten year traffic condition; and;
- Develop mitigation strategies to reduce traffic impacts from the development of the site as required.

1.1 Facility Description

1.1.1 Land Use

The proposed Project site is located approximately 150 km northeast of Winnipeg and immediately west of Hollow Water First Nation. The site has not previously been utilized for commercial operations. The property is located in an area of swampy muskeg and mixed forest. The region is generally flat, with some elevated limestone ridges scattered throughout the property. Two shallow lakes, and numerous wetlands, small creeks, and drainage channels are located within the area of the proposed mine.

Silica sand extracted from the site will be transported approximately 150 km driving distance west to a facility on the east side of Winnipeg off of Gunn Road.

The existing Hollow Water road off of PR 304 (approximately 2 km) will be upgraded and paved to enable access to the site and handle the trucking and hauling needs. A new road of approximately 5 km off of the existing Hollow Water road will be built to a paved standard to access the site. The existing Hollow Water road intersects PR 304 as illustrated in **Appendix A**.

The road will be a two-lane all season road with a paved surface and a 60m cleared right of way.

1.1.2 Study Area

The Project is located approximately 150 km northeast of Winnipeg and immediately west of Hollow Water First Nation. The study limits are from the proposed site to intersection of the Hollow Water road at PR 304.

1.1.3 Site Plan

The Project site plan is shown in **Appendix A**.

1.1.4 Study Intersections and Conditions

The study will review the intersection of the existing Hollow Water road and PR 304. PR 304 in this area is a gravel surfaced all season road with gravel shoulders through the limits of the Project with a posted speed of 90 km/h. The Hollow Water road is a gravel surfaced all season road with a posted speed limit of 90 km/h.

Within the study area the intersection reviewed is as follows:

- PR 304 at the Hollow Water Road

1.1.5 Phasing of Development

For the purpose of this study it is assumed that the Project will follow a buildout plan to begin operations in the year 2020. For our analysis the baseline traffic is modelled using the 2017 traffic volumes available from the Manitoba Highway Traffic Information System (MHTIS) and follows a 10 year design horizon for background traffic volumes from 2020 to 2030 as per Manitoba Infrastructure Traffic Impact Study guidelines.

1.2 Traffic Volumes

1.2.1 Baseline Traffic Volumes

Baseline existing traffic volumes for background traffic were developed by referencing existing 2017 traffic counts from Manitoba Infrastructure ("MI") and the University of Manitoba Traffic Information Group ("UMTIG") using various count stations along PR 304 near the study area. From this count station information a 1% yearly growth rate was applied to the 2017 AADT volumes to arrive at the 2020 baseline traffic volumes. These volumes were the further developed for the 10 year buildout background baseline traffic using a 1% yearly growth rate to the year 2030.

The peak hour volumes were then developed using 15% of the AADT volumes to determine the intersection peak hour volumes for the 2020 year baseline. A peak jour factor of 0.8 was used for the rural condition. A summary of the unbalanced traffic volumes follows in Table 1.1. The more detailed traffic volume information including the station count information can be found in **Appendix B**.

Table 1.1 – Baseline Existing Background Traffic Peak Hour Volumes

Intersection	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Year 2020 - PR 304 at Hollow Water Road	12	15	1	1	15	1	2	2	2	1	1	12
Year 2030 - PR 304 at Hollow Water Road	14	17	2	2	17	2	2	2	2	1	2	14

Intersection	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Year 2020 – Mine Access Road at Hollow Water Road	0	0	0	0	0	0	0	14	0	0	14	0
Year 2030 – Mine Access Road at Hollow Water road	0	0	0	0	0	0	0	18	0	0	18	0

1.2.2 Traffic Growth Rate

For the purposes of this study a sustainable growth rate of 1% was selected for the three year period from the 2017 station counts to the 2020 Baseline existing traffic count and also for the ten (10) year design horizon Baseline background traffic in the year 2030.

1.2.3 Site Generated Traffic

Based on the operational data provided by CPSI for the Project, it was noted that the workforce for the mine is expected to be comprised of workers from Hollow Water/Seymourville/Wanipigow as well as from Manigotagan. An estimated trip generation of 35 light vehicles entering and exiting during the peak hour was assumed. This is based on a schedule of three shifts per day and 35 people per shift including deliveries. The new site generated traffic for trucks travelling from the site to Winnipeg is estimated at 60 trucks in each direction during the peak hour.

The truck percentage at the intersection on PR 304 and Hollow Water Road and at the intersection of the Mine Access Road at Hollow Water Road is estimated at approximately 60%.

1.2.4 Trip Distribution

As there is no traffic count information for Hollow Water Road the trip distribution of the PR 304 and Hollow Water Road intersection was based on station counts on PR 304 located east and west of the Hollow Water Road.

For new site generated traffic trip distribution assignments for the haul trucks it was assumed that all of the trucks leave the mine site for Winnipeg and return along R 304 and the Hollow Water road. Site generated light vehicle traffic distribution assumed a 50/50 split leaving and returning north and south from the Mine Access Road at the Hollow Water Road.

1.2.5 Total Future Traffic

Background traffic for the 10 year study design horizon was combined with the site generated traffic to determine the future traffic at full buildout. The intersection total future peak hour traffic volumes and turning movements at full buildout are shown in **Table 1.2**.

Table 1.2 – Traffic Peak Hour Volumes at Full Buildout in 2030

Intersection	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
PR 304 at Hollow Water Road	92	17	2	2	17	2	2	2	2	2	2	92
Mine Access Road at Hollow Water Road	18	0	78	0	0	0	78	18	0	0	18	18

1.3 Traffic Analysis

1.3.1 Site Access

The proposed Mine Access Road will be connected to the existing Hollow Water Road and be stop controlled in the eastbound direction. Vehicle movement on the Hollow Water Road will remain free flowing with no stop conditions. The intersection at PR 304 and Hollow Water Road will remain stop controlled in the southbound direction.

1.3.2 Level of Service (LOS)

This analysis focused on the traffic impact at the intersection of PR 304 and Hollow Water Road and the intersection at the proposed Mine Access Road and the Hollow Water Road. The analysis reviewed the LOS and capacity for these intersections under baseline condition and at full buildout in the year 2030.

For stop controlled intersections, the LOS is based on the intersection capacity. Generally, a LOS of D is the lowest acceptable LOS for a given movement within an intersection when analyzing short-term planning horizons, while a LOS of E is the lowest acceptable LOS for long-term planning horizons. LOS of F means the intersection is failing to maintain an acceptable LOS. Movements experiencing LOS of E or F usually require improvements to reduce delays. For this study we reference the Intersection Capacity Utilization (ICU) as a percentage which compares the traffic volumes to the intersection's ultimate capacity.

Table 1.3 – LOS and ICU at 2030 of the Baseline Existing Traffic and at Full Buildout

Intersection	2030 Existing LOS	2030 LOS at Full Buildout	2030 Existing Intersection Capacity Utilization (ICU)	2030 ICU at Full Buildout
PR 304 at Hollow Water Road	A	A	18.6%	25.9%
Mine Access Road at Hollow Water Road	A	A	6.7%	24.4%

Detailed outputs from the Synchro Analysis are contained in Appendix D.

1.3.3 Project Circulation and Queuing Analysis

The site circulation and queuing analysis was completed for full buildout. For the queue analysis a length of 8m was assumed to represent one vehicle. Maximum queues at full build out indicate that there are very little queues due to the Project at the study intersections (3 vehicles). Detailed outputs for the queue analyses are contained in Appendix D.

1.3.4 Functional Design Recommendations of Proposed Intersection Improvements

The study intersections are shown in **Appendix A**. Manitoba Infrastructure ("MI") has development policies and procedures and established practices for managing access to Industrial sites in the province. The Roadside Management Manual provides the primary guidance with consistent interpretation, and application of policies and procedures.

Based on information provided by CPSI it is intended that the haul vehicles to be used for operations include the semi-trailer configuration truck. The MI typical Industrial/Commercial Multi-Lot Residential Access Treatment dated August 2005 is included in **Appendix E** and provides geometric recommendations for vehicle configurations up to WB-20. It is recommended that the proposed geometry of the new intersections at Hollow Water Road follow the geometry of MI's typical Industrial/Commercial/Multi-Lot Residential Access Treatment.

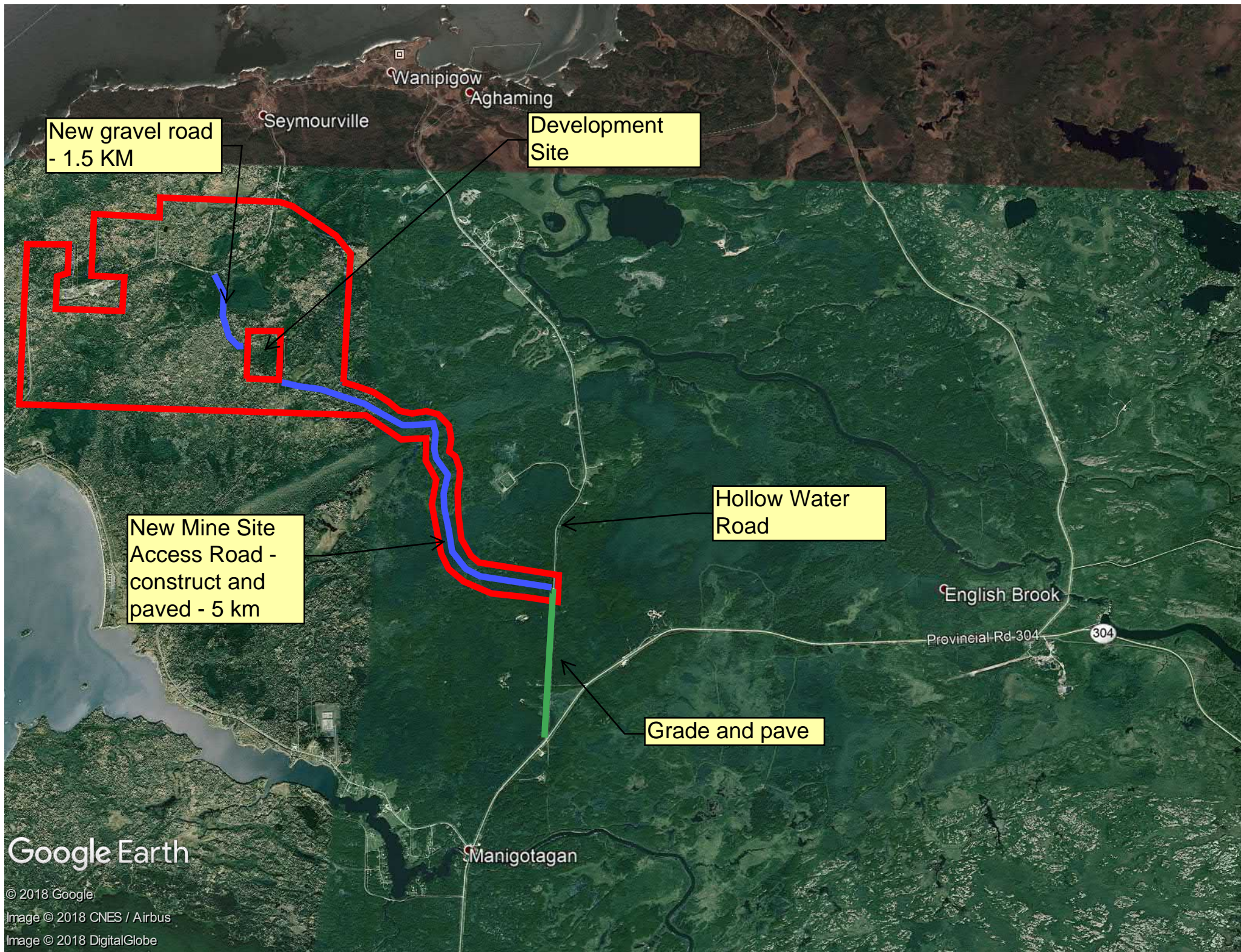
1.4 Conclusions and Recommendations

The work carried out in this Traffic Impact Study represents an analysis of the traffic impact of the proposed Wanipigow Sand Extraction Project on the PR 304 and Hollow Water road network. The study determined the following conclusions and recommendations:

- The site generated trips at full buildout for the peak hour for the Mine Access Road are: 78 vehicles entering and 78 vehicles exiting onto Hollow Water Road.
- The site generated trips at full buildout for the peak hour for the intersection at PR 304 and Hollow Water Road are: 96 vehicles entering and exiting PR 304.
- Background traffic was evaluated based on the Manitoba Highway Traffic Information System (MHTIS) traffic count data, information provided by the CPSI operations and 1% growth of background traffic over the ten (10) year design horizon to full buildout in the year 2030.
- Level of Service (LOS) for the intersection on PR 304 at the Hollow Water Road at full buildout is LOS – A.
- LOS for the intersection on Hollow Water Road at the proposed Mine Access Road at full buildout is LOS - A.
- The intersections along Hollow Water Road in the study area have adequate reserve capacity at full buildout to handle the site generated traffic.
- It is recommended that the proposed intersection geometry for the access and egress to the site at the Hollow Water Road and Mine Access road intersection follow the geometry of MI's typical Industrial/Commercial/Multi-Lot Residential Access Treatment.

APPENDIX A

Development Plan



New gravel road
- 1.5 KM

Development
Site

New Mine Site
Access Road -
construct and
paved - 5 km

Hollow Water
Road

Grade and pave

Google Earth

© 2018 Google
Image © 2018 CNES / Airbus
Image © 2018 DigitalGlobe

APPENDIX B

Traffic Volumes



MHTIS 2017

10 km

Scale 1: 243155



APPENDIX C

Photos

• Provincial Trunk Highways and Provincial Roads •

Station No	Dir	Type	Location Description	Year Est	AADT	ASDT%	30thHour%
Highway Number: 302							
2448	C	CCS-TUBE	N. OF P.T.H. #12	2013	100	109	11
2448	C	CCS-TUBE	N. OF P.T.H. #12	2016	200	109	11
2449	C	CCS-TUBE	S. OF P.R. #303	2010	310	109	11
2449	C	CCS-TUBE	S. OF P.R. #303	2012	310	109	11
2449	C	CCS-TUBE	S. OF P.R. #303	2015	300	109	11
801	C	CCS-TUBE	N. OF P.R. #303	2010	290	109	11
801	C	CCS-TUBE	N. OF P.R. #303	2012	390	109	11
801	C	CCS-TUBE	N. OF P.R. #303	2015	410	109	11
1908	C	CCS-TUBE	0.5 KM N. OF P.R. #210	2010	620	109	11
1908	C	CCS-TUBE	0.5 KM N. OF P.R. #210	2012	750	109	11
1908	C	CCS-TUBE	0.5 KM N. OF P.R. #210	2015	840	109	11
2222	C	CCS-TUBE	2.4 KM S. OF P.T.H. #1	2010	630	109	11
2222	C	CCS-TUBE	2.4 KM S. OF P.T.H. #1	2013	640	109	11
2222	C	CCS-TUBE	2.4 KM S. OF P.T.H. #1	2016	510	109	11
865	C	CCS-TUBE	N. OF P.T.H. #1	2010	710	135	20
865	C	CCS-TUBE	N. OF P.T.H. #1	2013	710	138	20
2269	C	CCS-TUBE	3.2 KM S. OF P.R. #501	2011	210	137	21
2269	C	CCS-TUBE	3.2 KM S. OF P.R. #501	2014	280	136	20
2269	C	CCS-TUBE	3.2 KM S. OF P.R. #501	2017	280	137	19
866	C	CCS-TUBE	N. OF P.R. #501	2011	160	137	21
866	C	CCS-TUBE	N. OF P.R. #501	2014	230	136	20
866	C	CCS-TUBE	N. OF P.R. #501	2017	190	137	19
873	C	CCS-TUBE	S. OF P.T.H. #15	2011	180	137	21
873	C	CCS-TUBE	S. OF P.T.H. #15	2014	530	136	20
873	C	CCS-TUBE	S. OF P.T.H. #15	2017	240	137	19
874	C	CCS-TUBE	N. OF P.T.H. #15	2011	1,050	126	17
874	C	CCS-TUBE	N. OF P.T.H. #15	2014	840	127	17
874	C	CCS-TUBE	N. OF P.T.H. #15	2017	1,050	129	17
2506	C	CCS-TUBE	10.0 KM N. OF P.T.H. #15	2011	1,200	126	17
2506	C	CCS-TUBE	10.0 KM N. OF P.T.H. #15	2013	1,150	127	16
# 2506	C	CCS-TUBE	10.0 KM N. OF P.T.H. #15	2016	1,280		
1927	C	CCS-TUBE	S. OF P.T.H. #44	2011	2,850	126	17
1927	C	CCS-TUBE	S. OF P.T.H. #44	2013	2,690	127	16
# 1927	C	CCS-TUBE	S. OF P.T.H. #44	2016	2,900		

Highway Number: 303

802	C	CCS-TUBE	E. OF P.T.H. #12	2010	840	109	11
802	C	CCS-TUBE	E. OF P.T.H. #12	2012	680	109	11
802	C	CCS-TUBE	E. OF P.T.H. #12	2015	790	109	11
2502	C	CCS-TUBE	W. OF P.R. #302	2010	210	109	11
2502	C	CCS-TUBE	W. OF P.R. #302	2012	230	109	11
2502	C	CCS-TUBE	W. OF P.R. #302	2015	270	109	11

Highway Number: 304

1970	C	CCS-TUBE	E. OF P.T.H. #59	2011	490	135	20
1970	C	CCS-TUBE	E. OF P.T.H. #59	2013	340	136	20
1970	C	CCS-TUBE	E. OF P.T.H. #59	2016	420	133	20
2551	C	CCS-TUBE	E. OF P.T.H. #12	2011	1,210	135	20
2551	C	CCS-TUBE	E. OF P.T.H. #12	2013	1,030	136	20
2551	C	CCS-TUBE	E. OF P.T.H. #12	2016	1,050	133	20
2273	C	CCS-TUBE	0.4 KM S. OF P.T.H. #11	2011	1,360	126	17
2273	C	CCS-TUBE	0.4 KM S. OF P.T.H. #11	2014	1,330	127	17
2273	C	CCS-TUBE	0.4 KM S. OF P.T.H. #11	2017	1,230	129	17
534	C	CCS-TUBE	4.8 KM N. OF P.T.H. #11	2011	690	147	26
534	C	CCS-TUBE	4.8 KM N. OF P.T.H. #11	2014	660	143	24
534	C	CCS-TUBE	4.8 KM N. OF P.T.H. #11	2017	790	149	23
533	C	CCS-TUBE	3.2 KM S. OF MANIGOTAGAN ACCESS RD.	2011	450	147	26

• Provincial Trunk Highways and Provincial Roads •

Station No	Dir	Type	Location Description	Year Est	AADT	ASDT%	30thHour%
Highway Number: 304							
533	C	CCS-TUBE	3.2 KM S. OF MANIGOTAGAN ACCESS RD.	2014	440	143	24
533	C	CCS-TUBE	3.2 KM S. OF MANIGOTAGAN ACCESS RD.	2017	540	149	23
2169	C	CCS-TUBE	W. OF WANIPIGOW LAKE ACCESS RD.	2011	250	147	26
2169	C	CCS-TUBE	W. OF WANIPIGOW LAKE ACCESS RD.	2014	190	143	24
2169	C	CCS-TUBE	W. OF WANIPIGOW LAKE ACCESS RD.	2017	200	149	23
531	C	CCS-TUBE	3.2 KM W. OF BISSETT	2011	230	147	26
531	C	CCS-TUBE	3.2 KM W. OF BISSETT	2014	110	143	24
531	C	CCS-TUBE	3.2 KM W. OF BISSETT	2017	180	149	23
532	C	CCS-TUBE	3.2 KM E. OF BISSETT	2011	80	147	26
532	C	CCS-TUBE	3.2 KM E. OF BISSETT	2014	130	143	24
532	C	CCS-TUBE	3.2 KM E. OF BISSETT	2017	50	149	23
2343	C	CCS-TUBE	N. OF P.R. #314	2011	40	147	26
2343	C	CCS-TUBE	N. OF P.R. #314	2014	10	143	24
2343	C	CCS-TUBE	N. OF P.R. #314	2017	20	149	23
2344	C	CCS-TUBE	S. OF P.R. #314	2011	20	147	26
2344	C	CCS-TUBE	S. OF P.R. #314	2014	10	143	24
2344	C	CCS-TUBE	S. OF P.R. #314	2017	20	149	23
Highway Number: 305							
613	C	CCS-TUBE	0.2 KM S. OF P.T.H. #1	2011	1,510	119	14
613	C	CCS-TUBE	0.2 KM S. OF P.T.H. #1	2013	1,180	117	14
613	C	CCS-TUBE	0.2 KM S. OF P.T.H. #1	2016	1,440	119	14
612	C	CCS-TUBE	N. OF P.T.H. #2	2011	410	119	14
612	C	CCS-TUBE	N. OF P.T.H. #2	2013	330	117	14
612	C	CCS-TUBE	N. OF P.T.H. #2	2016	360	119	14
2014	C	CCS-TUBE	S. OF P.T.H. #2	2011	110	119	14
2014	C	CCS-TUBE	S. OF P.T.H. #2	2013	80	117	14
2014	C	CCS-TUBE	S. OF P.T.H. #2	2016	150	119	14
1015	C	CCS-TUBE	E. OF P.R. #240	2011	40	119	14
1015	C	CCS-TUBE	E. OF P.R. #240	2013	50	117	14
1015	C	CCS-TUBE	E. OF P.R. #240	2016	70	119	14
1014	C	CCS-TUBE	W. OF P.T.H. #13	2011	90	111	11
1014	C	CCS-TUBE	W. OF P.T.H. #13	2014	70	112	11
1014	C	CCS-TUBE	W. OF P.T.H. #13	2017	100	106	11
1013	C	CCS-TUBE	E. OF P.T.H. #13	2011	130	111	11
1013	C	CCS-TUBE	E. OF P.T.H. #13	2014	180	112	11
1013	C	CCS-TUBE	E. OF P.T.H. #13	2017	150	106	11
2334	C	CCS-TUBE	W. OF P.R. #248	2011	70	113	12
2334	C	CCS-TUBE	W. OF P.R. #248	2014	60	114	12
2334	C	CCS-TUBE	W. OF P.R. #248	2017	90	119	13
2333	C	CCS-TUBE	E. OF P.R. #248	2011	70	113	12
2333	C	CCS-TUBE	E. OF P.R. #248	2014	60	114	12
2333	C	CCS-TUBE	E. OF P.R. #248	2017	100	119	13
1012	C	CCS-TUBE	0.3 KM W. OF P.T.H. #3	2011	120	111	11
# 1012	C	CCS-TUBE	0.3 KM W. OF P.T.H. #3	2014	100		
1012	C	CCS-TUBE	0.3 KM W. OF P.T.H. #3	2017	160	111	11
1010	C	CCS-TUBE	E. OF P.R. #332	2011	180	111	11
# 1010	C	CCS-TUBE	E. OF P.R. #332	2014	240		
1010	C	CCS-TUBE	E. OF P.R. #332	2017	270	111	11
2332	C	CCS-TUBE	W. OF N. JCT. OF P.R. #330	2011	170	111	11
2332	C	CCS-TUBE	W. OF N. JCT. OF P.R. #330	2014	230	107	11
2332	C	CCS-TUBE	W. OF N. JCT. OF P.R. #330	2017	300	103	11
2171	C	CCS-TUBE	E. OF S. JCT. OF P.R. #330	2011	130	111	11
2171	C	CCS-TUBE	E. OF S. JCT. OF P.R. #330	2014	140	107	11
2171	C	CCS-TUBE	E. OF S. JCT. OF P.R. #330	2017	180	103	11
1007	C	CCS-TUBE	W. OF P.T.H. #75	2010	690	112	11
# 1007	C	CCS-TUBE	W. OF P.T.H. #75	2012	560		



Station 531 Highway 304 3.2 KM W. OF BISSETT

Control Section: 1304070 -- Sequence: 130407010

Station Type: CCS -- Equipment Type: CCS-TUBE

Estimates of Traffic Statistics

Dir	Date	Method	AADT	ASDT%	30th Hour%	%Trucks
C	1989	OLDMHT	130			
C	1990	OLDMHT	137			
C	1991	OLDMHT	140			
C	1992	OLDMHT	100			
C	1993	OLDMHT	100			10.0%
C	1995	95A1	100	116	12	
C	1999	99A1	120	144	26	
C	2003	03A1	90	148	24	
C	2005	TMG01	110	149	26	
C	2007	TMG01	140	144	25	
C	2009	TMG01	190	146	24	
C	2011	TMG01	230	147	26	
C	2014	TMG01	110	143	24	
C	2017	TMG01	180	149	23	

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Contact: University of Manitoba Transport Information Group

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Station 533

Highway 304 3.2 KM S. OF MANIGOTAGAN ACCESS RD.

Control Section: 1304040 -- Sequence: 130404010

Station Type: CCS -- Equipment Type: CCS-TUBE

Estimates of Traffic Statistics

Dir	Date	Method	AADT	ASDT%	30th Hour%	%Trucks
C	1989	OLDMHT	290			
C	1990	OLDMHT	298			
C	1991	OLDMHT	300			
C	1992	OLDMHT	320			
C	1993	OLDMHT	320			10.0%
C	1995	95A1	260	116	12	
C	1997	97A1	310	150	29	
C	1999	99A1	290	144	26	
C	2001	01A1	360	146	26	
C	2003	03A1	250	148	24	
C	2005	TMG01	310	149	26	
C	2007	TMG01	390	144	25	
C	2009	TMG01	450	146	24	
C	2011	TMG01	450	147	26	
C	2014	TMG01	440	143	24	
C	2017	TMG01	540	149	23	

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Station 1773

Highway 800 MANIGOTAGAN ENTRY - W. OF P.R. #304

Control Section: -- Sequence:
Station Type: TOW-CCS -- Equipment Type: CCS-TUBE

Estimates of Traffic Statistics

Dir	Date	Method	AADT	ASDT%	30th Hour%	%Trucks
C	1989	OLDMHT	430			
C	1990	OLDMHT	398			
C	1991	OLDMHT	400			
C	1992	OLDMHT	450			
C	1993	OLDMHT	450			
C	1995	95A1	640			

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Station 2169 Highway 304 W. OF WANIPIGOW LAKE ACCESS RD.

Control Section: 1304060 -- Sequence: 130406010

Station Type: CCS -- Equipment Type: CCS-TUBE

Estimates of Traffic Statistics

Dir	Date	Method	AADT	ASDT%	30th Hour%	%Trucks
C	1989	OLDMHT	140			
C	1990	OLDMHT	147			
C	1991	OLDMHT	150			
C	1992	OLDMHT	160			
C	1993	OLDMHT	160			
C	1995	95A1	120	116	12	
C	1999	99A1	140	144	26	
C	2003	03A1	110	148	24	
C	2005	TMG01	110	149	26	
C	2007	TMG01	170	144	25	
C	2009	TMG01	210	146	24	
C	2011	TMG01	250	147	26	
C	2014	TMG01	190	143	24	
C	2017	TMG01	200	149	23	

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Station 2229

Highway 642 WANIPIGOW LAKE - N. OF P.R.

#304

Control Section: -- Sequence:
Station Type: TOW-CCS -- Equipment Type: CCS-TUBE

Estimates of Traffic Statistics

Dir	Date	Method	AADT	ASDT%	30th Hour%	%Trucks
C	1989	OLDMHT	25			
C	1990	OLDMHT	28			
C	1991	OLDMHT	30			
C	1992	OLDMHT	50			
C	1993	OLDMHT	50			
C	1995	95A1	30			

Manitoba Infrastructure and Transportation - Manitoba Highway Traffic Information System
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APPENDIX D

Synchro Analysis

PR304 at Hollow Water Road
Looking east



PR304 at Hollow Water Road
Looking northeast



PR304 at Hollow Water Road
Looking southwest



Google Earth

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PR304 at Hollow Water Road
Looking West



APPENDIX E

Typical Industrial/Commercial
Multi-lot Residential Access
Treatment



Lanes, Volumes, Timings
1: Mine Access Road & Hollow Water Road

11/24/2018



Lane Group	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Volume (vph)	0	0	0	18	18	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Fit						
Fit Protected						
Satd. Flow (prot)	1883	0	0	1883	1883	0
Fit Permitted						
Satd. Flow (perm)	1883	0	0	1883	1883	0
Link Speed (k/h)	48			48	48	
Link Distance (m)	323.4			161.5	216.6	
Travel Time (s)	24.3			12.1	16.2	
Peak Hour Factor	0.88	0.88	0.88	0.88	0.88	0.88
Adj. Flow (vph)	0	0	0	20	20	0
Shared Lane Traffic (%)						
Lane Group Flow (vph)	0	0	0	20	20	0
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Left	Left	Right
Median Width(m)	3.7			0.0	0.0	
Link Offset(m)	0.0			0.0	0.0	
Crosswalk Width(m)	1.6			1.6	1.6	
Two way Left Turn Lane						
Headway Factor	0.99	0.99	0.99	0.99	0.99	0.99
Turning Speed (k/h)	24	14	24			14
Sign Control	Stop			Free	Free	

Intersection Summary

Area Type	Other
Control Type	Unsignalized
Intersection Capacity Utilization	6.7%
Analysis Period (min)	15
	ICU Level of Service A

Lanes, Volumes, Timings

1: Mine Access Road & Hollow Water Road

11/26/2018



Lane Group	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Volume (vph)	18	78	78	18	18	18
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Frt	0.890				0.932	
Flt Protected	0.991			0.961		
Satd. Flow (prot)	1134	0	0	1236	1755	0
Flt Permitted	0.991			0.961		
Satd. Flow (perm)	1134	0	0	1236	1755	0
Link Speed (k/h)	48			48	48	
Link Distance (m)	323.4			161.5	216.6	
Travel Time (s)	24.3			12.1	16.2	
Peak Hour Factor	0.88	0.88	0.88	0.88	0.88	0.88
Heavy Vehicles (%)	2%	60%	60%	2%	2%	2%
Adj. Flow (vph)	20	89	89	20	20	20
Shared Lane Traffic (%)						
Lane Group Flow (vph)	109	0	0	109	40	0
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Left	Left	Right
Median Width(m)	3.7			0.0	0.0	
Link Offset(m)	0.0			0.0	0.0	
Crosswalk Width(m)	1.6			1.6	1.6	
Two way Left Turn Lane						
Headway Factor	0.99	0.99	0.99	0.99	0.99	0.99
Turning Speed (k/h)	24	14	24			14
Sign Control	Stop			Free	Free	

Intersection Summary

Area Type: Other

















Control Type: Unsignalized

Intersection Capacity Utilization 24.4% ICU Level of Service A

Analysis Period (min) 15

















Lanes, Volumes, Timings
4: Hollow Water Access & PR304

11/6/2018

												
Lane Group	NBL	NBT	NBR	SBL	SBT	SBR	NEL	NET	NER	SWL	SWT	SWR
Lane Configurations												
Volume (vph)	2	2	0	0	2	14	14	17	2	0	17	0
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt					0.880			0.993				
Flt Protected		0.976						0.979				
Satd. Flow (prot)	0	1810	0	0	1632	0	0	1803	0	0	1855	0
Flt Permitted		0.976						0.979				
Satd. Flow (perm)	0	1810	0	0	1632	0	0	1803	0	0	1855	0
Link Speed (k/h)		48			48			48			48	
Link Distance (m)		83.7			106.2			152.2			119.6	
Travel Time (s)		6.3			8.0			11.4			9.0	
Peak Hour Factor	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88
Adj. Flow (vph)	2	2	0	0	2	16	16	19	2	0	19	0
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	4	0	0	18	0	0	37	0	0	19	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(m)		0.0			0.0			0.0			0.0	
Link Offset(m)		0.0			0.0			0.0			0.0	
Crosswalk Width(m)		1.6			1.6			1.6			1.6	
Two way Left Turn Lane												
Headway Factor	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91
Turning Speed (k/h)	24		14	24		14	24		14	24		14
Sign Control		Stop			Stop			Free			Free	
Intersection Summary												
Area Type:	Other											
Control Type:	Unsignalized											
Intersection Capacity Utilization	18.6%				ICU Level of Service A							
Analysis Period (min)	15											

Lanes, Volumes, Timings
4: Hollow Water Access & PR304

11/6/2018

												
Lane Group	NBL	NBT	NBR	SBL	SBT	SBR	NEL	NET	NER	SWL	SWT	SWR
Lane Configurations												
Volume (vph)	2	2	0	0	2	92	92	17	2	0	17	2
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800
Lane Width (m)	4.9	4.9	4.9	4.9	4.9	4.9	4.9	4.9	4.9	4.9	4.9	4.9
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt					0.868			0.998			0.987	
Flt Protected		0.976						0.960				
Satd. Flow (prot)	0	1828	0	0	1124	0	0	1301	0	0	1848	0
Flt Permitted		0.976						0.960				
Satd. Flow (perm)	0	1828	0	0	1124	0	0	1301	0	0	1848	0
Link Speed (k/h)		48			48			48			48	
Link Distance (m)		83.7			106.4			152.1			119.7	
Travel Time (s)		6.3			8.0			11.4			9.0	
Peak Hour Factor	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88
Heavy Vehicles (%)	10%	10%	10%	10%	10%	60%	60%	10%	10%	10%	10%	10%
Adj. Flow (vph)	2	2	0	0	2	105	105	19	2	0	19	2
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	4	0	0	107	0	0	126	0	0	21	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(m)		0.0			0.0			0.0			0.0	
Link Offset(m)		0.0			0.0			0.0			0.0	
Crosswalk Width(m)		1.5			1.5			1.5			1.5	
Two way Left Turn Lane												
Headway Factor	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Turning Speed (k/h)	24		14	24		14	24		14	24		14
Sign Control		Stop			Stop			Free			Free	
Intersection Summary												
Area Type:	Other											
Control Type:	Unsignalized											
Intersection Capacity Utilization	25.9%				ICU Level of Service A							
Analysis Period (min)	15											

Intersection: 1: Mine Access Road & Hollow Water Road

Movement	EB
Directions Served	LR
Maximum Queue (m)	23.6
Average Queue (m)	17.7
95th Queue (m)	23.7
Link Distance (m)	317.9
Upstream Blk Time (%)	
Queuing Penalty (veh)	
Storage Bay Dist (m)	
Storage Blk Time (%)	
Queuing Penalty (veh)	

Network Summary

Network wide Queuing Penalty: 0

Queuing and Blocking Report

2030 Peak Hour Full Buildout

11/26/2018

Intersection: 4: Hollow Water Access & PR304

Movement	NB	SB
Directions Served	LTR	LTR
Maximum Queue (m)	2.3	14.2
Average Queue (m)	0.5	7.1
95th Queue (m)	2.0	15.2
Link Distance (m)	69.7	88.8
Upstream Blk Time (%)		
Queuing Penalty (veh)		
Storage Bay Dist (m)		
Storage Blk Time (%)		
Queuing Penalty (veh)		

Network Summary

Network wide Queuing Penalty: 0

Queuing and Blocking Report

2030 Peak Hour Baseline

11/26/2018

Intersection: 4: Hollow Water Access & PR304

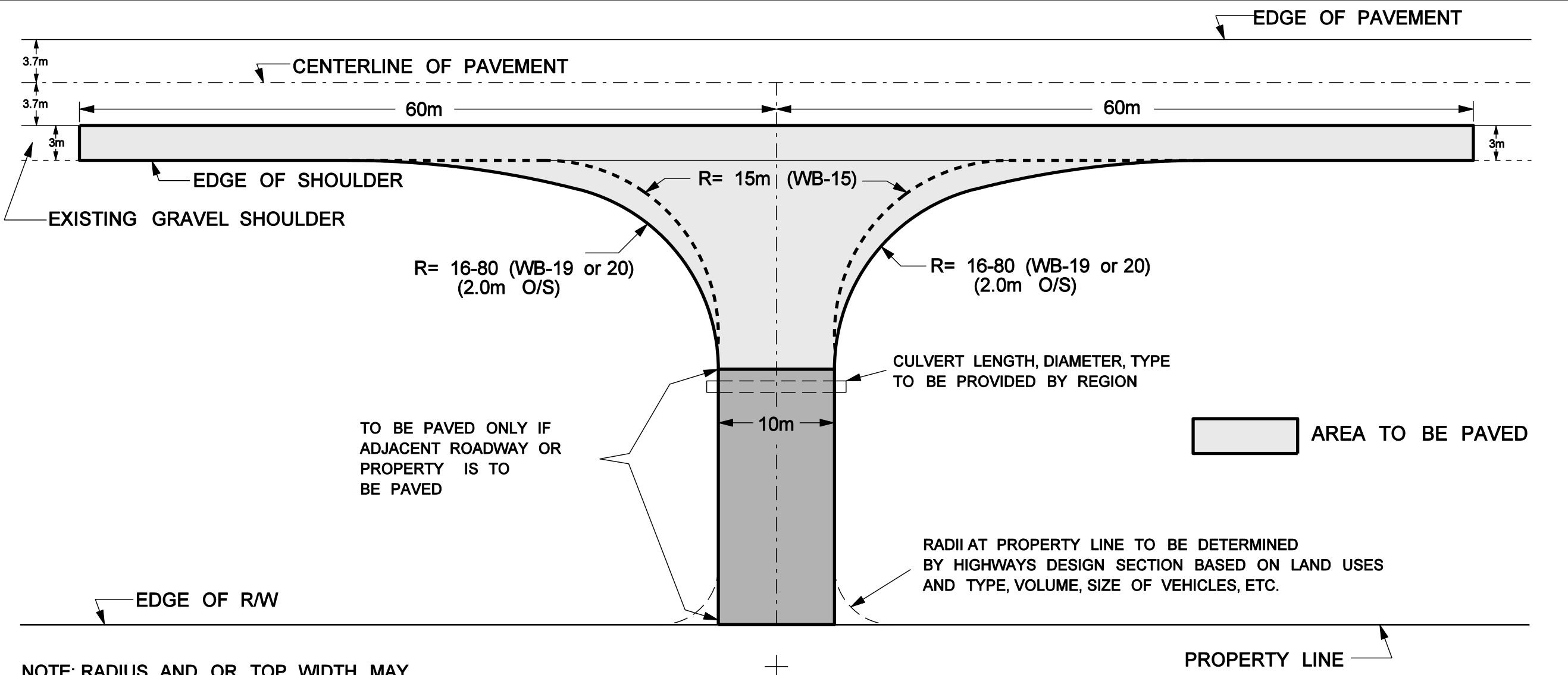
Movement	NB	SB
Directions Served	LTR	LTR
Maximum Queue (m)	2.5	14.1
Average Queue (m)	0.5	2.8
95th Queue (m)	2.1	12.1
Link Distance (m)	69.7	88.7
Upstream Blk Time (%)		
Queuing Penalty (veh)		
Storage Bay Dist (m)		
Storage Blk Time (%)		
Queuing Penalty (veh)		

Network Summary

Network wide Queuing Penalty: 0

APPENDIX E

Typical Industrial/Commercial
Multi-lot Residential Access
Treatment



NOTE: RADIUS AND OR TOP WIDTH MAY VARY DEPENDING ON THE DESIGN VEHICLE WITH THE WIDEST TURNING SWEEP THAT CAN BE EXPECTED TO USE THE ACCESS ON A DAILY BASIS.

SCALE, 1 : 400

RELEASED FOR CONSTRUCTION

TYPICAL INDUSTRIAL/COMMERCIAL
MULTI-LOT RESIDENTIAL
ACCESS TREATMENT

TECHNICAL SERVICES ENGINEER DATE

AUGUST 2005

