



CITY OF HAMILTON
PLANNING AND ECONOMIC DEVELOPMENT DEPARTMENT
Planning Division

TO:	Chair and Members Planning Committee
COMMITTEE DATE:	February 6, 2018
SUBJECT/REPORT NO:	Application for an Amendment to the Rural Hamilton Official Plan and the City of Hamilton Zoning By-law No. 05-200 for Lands Located at 1051 Green Mountain Road East, Stoney Creek (Ward 11) (PED18029)
WARD(S) AFFECTED:	Ward 11
PREPARED BY:	June Christy 905-546-2424 Ext. 5863
SUBMITTED BY:	Steve Robichaud Director, Planning and Chief Planner Planning and Economic Development Department
SIGNATURE:	

RECOMMENDATION

- (a) That **Amended Rural Hamilton Official Plan Amendment Application RHOPA-15-22, by Waterford Sand & Gravel Limited (Owner)**, to establish a Site Specific Policy Area to permit the extraction of mineral aggregate resources, for lands located at 1051 Green Mountain Road, East (Stoney Creek), as shown on Appendix "A" to Report PED18029, be **APPROVED** on the following basis:
- (i) That the draft Official Plan Amendment, attached as Appendix "B" to Report PED18029, be adopted by City Council;
 - (ii) That the proposed amendment is consistent with the Provincial Policy Statement (2014), and conforms to the Greenbelt Plan.
- (b) That **Amended Zoning By-law Amendment Application ZAC-15-052 by Waterford Sand & Gravel Limited, (Owner)**, for a change in zoning from the Agricultural (A1) Zone in the City of Hamilton Zoning By-law No. 05-200 to the Extractive Industrial (M12) Zone in the City of Hamilton Zoning By-law No. 05-200, for lands located at 1051 Green Mountain Road East, (Stoney Creek), as shown on Appendix "A" to Report PED18029, be **APPROVED** on the following basis:

- (i) That the draft By-law, attached as Appendix “C” to Report PED18029, which has been prepared in a form satisfactory to the City Solicitor, be enacted by City Council; and,
- (ii) That the proposed change in zoning is consistent with the Provincial Policy Statement (2014), conforms to the Greenbelt Plan and will comply with the Rural Hamilton Official Plan upon finalization of Rural Hamilton Official Plan Amendment No. ____.
- (c) That staff be directed to notify the Ministry of Natural Resources that the City of Hamilton’s objections to the *Aggregate Resources Act* License Application, by Waterford Sand and Gravel Limited, for the subject lands, have been resolved; and that the City of Hamilton no longer has an objection to the issuance of a licence under the ARA for the subject lands, in accordance with the revised ARA Site Plans, dated August 29, 2017, once the subject Official Plan Amendment and Zoning By-law Amendment are in full force and effect.

EXECUTIVE SUMMARY

Waterford Sand and Gravel Limited (Waterford) has applied for an amendment to the Rural Hamilton Official Plan and the City of Hamilton Zoning By-law No. 05-200 to permit an extension to the approved Vinemount Quarry located at 1051 Green Mountain Road East, Stoney Creek. At the same time, Waterford has also applied for a Category 2, Class A licence under the Provincial *Aggregate Resources Act* (ARA) to permit the quarry extension. The total area proposed to be licensed is 45.2 ha, with the proposed extraction area limited to 37.7 ha.

Several technical studies have been completed by Waterford Sand and Gravel, including an Aggregate Assessment, Agricultural Impact Assessment, Agricultural Soil Assessment, Level 2 Hydrogeological Study, EIS and Level 1 and 2 Natural Environment Report, Stage 1 and 2 Archaeological Report, Fish Aquatic Resource Inventory, Noise Assessment, Vibration / Blasting, Dust / Air Quality and Visual Impact studies. These studies have undergone review by City staff and outside agencies, and in some cases, additional peer review. The overall findings of these studies demonstrate that either there is no negative impact to the surrounding area or that appropriate mitigation can be provided to address any potential impacts on nearby property owners or natural features.

Alternatives for Consideration – See Page 39

FINANCIAL – STAFFING – LEGAL IMPLICATIONS

Financial: N/A

Staffing: N/A

Legal: As required by the *Planning Act*, Council shall hold at least one Public Meeting to consider applications for an Official Plan Amendment and Zoning By-law Amendments. The Ministry of Natural Resources (MNR) is the approval authority for license applications to extract mineral aggregate resources under the Aggregate Resource Act (ARA).

HISTORICAL BACKGROUND

The subject property is located directly west of the existing Vinemount Quarry, located northwest of the Green Mountain Road and the Tenth Road East intersection as shown on Appendix “A to Report PED18029 and comprise an area of 45.3 ha. The lands are occupied by agricultural uses (soy bean fields).

Proposal:

Waterford Sand & Gravel Limited has applied for an amendment to the Rural Hamilton Official Plan and the City of Hamilton Zoning By-law to permit an extension to the approved Vinemount Quarry. Waterford has also simultaneously applied for a Category 2, Class A licence under the Provincial *Aggregate Resources Act* (ARA) to permit the quarry extension. The total area proposed to be licensed is 45.2 ha, with the proposed extraction area limited to 37.7 ha.

The quarry will operate with a combined annual tonnage limit of extraction of 900,000 tonnes, which is the same annual limit as the existing quarry, and is anticipated to take approximately 25 to 30 years to extract. The hours of operation will be from 7 a.m. to 7:00 p.m. six days a week from Monday to Friday excluding statutory holidays and from 8:00 a.m. to 3:00 p.m. on Saturdays. The existing quarry has approximately two years left before the material is completely extracted, and then the quarry extraction will move to the proposed extension site to the west where extraction will take place in three phases in a north to south direction as indicated in Appendix “F” to Report PED18029. The quarry extension will continue to utilize existing facilities at the existing quarry including the existing truck access off Tenth Line East and the existing re-fueling facilities and weigh scale. Processing (crushing, washing, screening and blending) will occur on the quarry floor until such time as suitable and sufficient space is available within the expansion lands.

Official Plan and Zoning By-law Amendments

Applications to amend the Rural Hamilton Official Plan and the City of Hamilton Zoning By-law are required to permit the proposed quarry extension. The subject lands are currently designated Specialty Crop in the RHOP. The application submitted by Waterford proposed a re-designation of the subject lands to the Mineral Aggregate Resource Extraction Area designation. In this regard, staff note that Provincial planning policies (Provincial Policy Statement and Greenbelt Plan) do not permit the re-designation of prime agricultural land (Specialty Crop Lands) to another designation; however the policies do allow additional uses to be added to Specialty Crop lands, including mineral aggregate extraction. As such, staff are proposing that the required Official Plan Amendment Application be amended to add a site specific policy area to permit extraction of aggregate resources within the lands designated Specialty Crop. Further discussion is provided in the Analysis and Rationale for Recommendation Section below.

The subject lands are currently zoned Agriculture (A1) in the City of Hamilton Zoning By-law. To permit the extraction of mineral aggregate resources, the subject lands require a rezoning to the Extractive Industrial (M12) Zone in the Zoning By-law No. 05-200.

Aggregate Resources Act License Application

In September 2015, Waterford's ARA License Application was deemed complete by the Ministry of Natural Resources (MNR). Under the ARA, the applicant (Waterford) is required to provide notice of the license application to the local municipality as well as other prescribed agencies. The license application was received by the City on September 16, 2015. On September 17, 2015, Waterford provided public notice of the license application in the Stoney Creek News and the Hamilton Spectator, thus marking the beginning of a 45 day commenting period prescribed under the ARA. The City was required to submit its objections to the proposed licence within that 45 day period. On October 20, 2015, Council approved the staff recommendation in Report PED15170 indicating the City's objections to the ARA License Application on the basis that the application was premature as the land use was not permitted; the OPA and ZBA applications had not been reviewed; peer reviews had not been completed; and that initial concerns related to hydrogeology, noise, vibration, blasting, dust and natural heritage had been identified.

The ARA further directs that, within two (2) years of the public notification, Waterford must respond to all objections received and provide a Notice of Objector Response to all objectors. This response must address all objections submitted by the objector and the actions taken by the proponent to address the objections. The City of Hamilton

received a Notice of Objector Response from Waterford dated June, 28 2017. In accordance with the ARA, the City had to respond to this letter within 20 days (by July 19, 2017) with recommendations that may resolve objections. If the City did not respond, it would be deemed that there is no longer a valid objection. City staff prepared a response and submitted it to the MNR and Waterford Sand and Gravel Limited on July 18, 2017. The 2017 staff letter stated that the City's objection remained outstanding, but noted that Waterford had been working cooperatively with City staff, however additional issues related primarily to hydrogeology and water resources remained.

It is noted that a licence under the ARA cannot be issued until such time as the subject lands are zoned to permit the extractive use. As such, a decision on the ARA Licence has not been made at this time.

Once the licence is issued by the MNRF, the approved Site Plan will become the primary document used by MNRF to ensure enforcement. The Site Plans incorporate all of the recommendations compiled by both Waterford's consultants, the relevant Provincial ministries, the NPCA and the City of Hamilton staff/CART.

Combined Aggregate Review Team (CART)

A Combined Agency Review Team (CART) was formed to assist in the review of the applications. The CART process has been successfully used in previous quarry applications that the City has reviewed (e.g., Lafarge Canada Inc. in November 2017). The CART was comprised of staff from several City departments and divisions, as well as staff from the Niagara Peninsula Conservation Authority (NPCA). Provincial staff, including Ministry of the Environment and Climate Change (MOECC) and the Ministry of Natural Resources and Forestry (MNRF) were kept informed of the CART process and peer reviews, but did not participate as members of CART. Rather than have each agency with an interest in the proposed quarry conduct its own technical reviews, the CART process provides an opportunity for the agencies to be represented on a team that retains expert peer reviews, at the proponent's expense. The CART approach provides a forum for the agencies to share views and perspectives on the applications, and a shared technical resource in the peer review team that they can draw from in reaching their independent positions and decisions.

Significant supporting studies have been prepared by the applicant and were submitted in support of the applications, including the following:

- Planning Summary Report and Aggregate Resource Assessment;
- Agricultural Impact Assessment;

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- Agricultural Survey and CLI Inventory Evaluation;
- Level 2 Hydrogeological Study;
- EIS and Level 1 and 2 Natural Environment Technical Report;
- Tree Preservation Plan;
- Stage 1 and 2 Archaeological Report;
- Fish / Aquatic Resource Inventory;
- Noise Assessment;
- Vibration / Blasting Report;
- Dust / Air Quality Study; and,
- Visual Impact Assessment.

The above noted studies have been reviewed by City staff and members of the CART. In addition, peer reviews were completed of the Hydrogeology and Hydrology Report, Noise Study, Air Quality Study and Blasting Study. A complete summary of these studies and peer review results is included as Appendix “E” to Report PED18029 and further discussed in the Analysis and Rationale for Recommendation Section below.

Chronology:

<u>September 16, 2015:</u>	Rural Official Plan Amendment RHOPA-15-022 and Zoning By-law Amendment Applications ZAC-15-052 were received.
<u>October 15, 2015:</u>	Applications deemed complete.
<u>September 21, 2015:</u>	Notice of ARA License Application to the MNR received by City of Hamilton.
<u>September 17, 2015:</u>	Waterford initiates public notification process under the ARA for proposed ARA License Application.
<u>October 20, 2015:</u>	Waterford holds Public Information Session, as required under the ARA.

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October 20, 2015: Staff Report PED15170 presented to Planning Committee. Report recommended that the City of Hamilton advise the MNR that it objects to the ARA License Application by Waterford due to it being premature.

October 30, 2015: Notice of Complete Application and Preliminary Circulation mailed to 40 property owners within 120 m of the subject property.

October 30, 2015: Public Notice Sign erected on the subject lands.

June 28, 2017: Waterford provides Notice of Objector Response to the City of Hamilton, as required under the ARA.

July 18, 2017: City of Hamilton sends response to the Notice of Objector Response to the MNR, stating that the City's 2015 objection remains outstanding, but notes that consultation with Waterford is ongoing.

January 10, 2018: Public Notice sign updated to reflect Public Meeting date.

January 19, 2018: Notice of Public Meeting mailed to 40 property owners within 120 m of the subject lands.

Details of Submitted Applications

Owner/Applicant: Waterford Sand and Gravel Limited

Agent: IBI Planning Consultants

Location: 1051 Green Mountain Road East, Stoney Creek

Description:

Frontage: +/- 415 m

Depth: +/- 1,085 m

Lot Area: +/- 45.2 ha

Services: Not serviced

EXISTING LAND USE AND ZONING

	<u>Existing Land Use</u>	<u>Existing Zoning</u>
<u>Subject Lands:</u>	Agriculture	Agriculture (A1) Zone
<u>Surrounding Lands:</u>		
North:	Dofasco 2000 Trail CPR Railway Tracks (Vinemount Meadows Sanctuary owned by Waterford and managed by the Hamilton Naturalists' Club)	Agriculture (A1) Zone
South:	Green Mountain Road, Agricultural and Residential Outdoor Storage	Agriculture (A1) Zone
East:	Mineral Aggregate Operation (Vinemount Quarry)	Extractive Industrial (M12) Zone
West:	Agricultural including Tree Farm	Agriculture (A1) Zone, Conservation / Hazard Land Rural (P7) Zone and Conservation / Hazard Land Rural (P8) Zone

POLICY IMPLICATIONS AND LEGISLATED REQUIREMENTS

Provincial Policy Statement

The applications have been reviewed against the policies of the Provincial Policy Statement (PPS). Applicable policies of the PPS as related to Rural and Agricultural lands, Mineral Aggregate Resources, Rehabilitation, Natural Heritage, Water Resources, Land Use Compatibility, and Cultural Heritage Resources are summarized in Appendix "D" to Report PED18029.

Based on the policy review in Appendix "D" to Report PED18029, and subject to the mitigation measures and conditions recommended by CART and staff with regard to the licence, the applications are consistent with the Provincial Policy Statement.

Greenbelt Plan (2017)

The applications have been reviewed against the policies of the Greenbelt Plan, 2017. The subject lands are located within the Protected Countryside Area. More specifically they are located within the Niagara Peninsula Tender Fruit and Grape Area and designated “Specialty Crop Areas” on Schedule 2 of the Greenbelt Plan and RHOP (Schedule D) in accordance with the City’s Rural Hamilton Official Plan designation.

Applicable policies of the Greenbelt Plan, 2017 as related to Rural and Agricultural lands, Mineral Aggregate Resources, Rehabilitation, Natural Heritage, Water Resources, and Cultural Heritage Resources are summarized in Appendix “D” to Report PED18029.

Based on the policy review in Appendix “D” to Report PED18029, and subject to the mitigation measures and conditions recommended by CART and staff with regard to the licence, the applications conform with the Greenbelt Plan, 2017.

Rural Hamilton Official Plan

The subject lands are currently designated “Specialty Crop” on Schedule “D” – Rural Land Use Designations of the Rural Hamilton Official Plan (RHOP). In addition, the subject lands are identified as “Potential Stone Aggregates” on Appendix C – Non-Renewable Resources (Appendix “C” remains under appeal, and therefore the Hamilton-Wentworth Official Plan Map No. 5 applies, which identifies the lands as Stone Aggregates). There are no Core Areas or Linkages identified on the subject lands on Schedule “B” – Natural Heritage System.

Applicable policies of the RHOP as related to Rural and Agricultural lands, Mineral Aggregate Resources, Rehabilitation, Natural Heritage, Water Resources, Noise and Air Emissions, and Cultural Heritage Resources are summarized in Appendix “D” to Report PED18029.

An Official Plan Amendment is required to permit the mineral aggregate use on the subject lands, discussed in the Analysis and Rationale for Recommendation Section below.

Hamilton Zoning By-law No. 05-200

The subject lands are zoned Agriculture “A1” Zone in the City of Hamilton Zoning By-law No. 05-200, and are proposed to be rezoned to the Extractive Industrial “M12” Zone.

RELEVANT CONSULTATION

The following Departments and Agencies had no comments or objection to the application:

- Recreation Division (Community and Emergency Services Department);
- Operations Division (Public Works Department);
- Forestry and Horticulture (Public Works Department); and,
- Alectra Utilities (formerly Horizon Utilities).

The following Departments and Agencies had comments on the application:

Source Protection Planning (Hamilton Water), Sustainable Initiatives Section (Public Works Department)

Hamilton Water was a member of the CART team and retained Cambium Engineering to participate in the peer review of the WSP Group Level 2 Hydrogeological Study. Their reviewed focussed primarily on the report entitled “Vinemount Quarry Extension, Level 2 Hydrogeological Study” by WSP Canada Inc. (WSP) in 2015. The following provides a summary of the issues identified in the peer review and how these issues were resolved with Waterford and WSP. A more detailed discussion is found in the Analysis and Rationale for Recommendation Section of this report, and further in Appendix “E” to Report PED18029.

The Vinemount South Swamp complex, and environmentally sensitive area, falls within the projected radius of influence of dewatering that will occur in the proposed extension. Since the Vinemount Swamp may be partially groundwater fed, there is a possibility that the swamp will be impacted. As such, Cambium recommended that WSP complete a pumping test on the western extent of the proposed extension to simulate the dewatered conditions of the proposed extension. Pumping tests and the installation of two new piezometers in the swamp showed no observable impacts from pumping and indicate that there is little concern for under draining from the quarry dewatering.

- Extraction depth of the proposed extension will be restricted to the top of the Decew formation, instead of a pre-determined depth which will also reduce the possibility of extracting lower quality material;
- WSP agreed to monitor the water levels in the deeper aquifer system found in the area, and the pump test included a new monitoring well screened in the deeper unit and the monitoring did not suggest an influence to the deeper system;

- Cambium believes that mitigation solutions to existing wells along 8th Road (well deepening, storage, etc.) are satisfactory; and,
- Cambium recommended that some of the existing wells in 87-Acre Park be monitored as part of the regular monitoring program. WSP agrees and Waterford will reach an agreement with the City to allow for monitoring on 87-Acre Park.

Through the peer review by Cambium, Source Water Protection is satisfied that appropriate mitigation measures to address surface and groundwater impacts have been identified and included in the updated monitoring and mitigation plan by WSP. Further, the improvements to the monitoring and mitigation plan will ensure that all potentially impacted wells will be included in the plans and that appropriate response to the well owner's concerns will be provided.

Cambium monitored other agencies who provided comments on the supporting studies of the proposed quarry extension which included MNRF, MOECC, and the NPCA. Cambium advised that the issues raised were relatively minor and were resolved through subsequent discussions. Some of the resolutions to the issues raised included the following:

- WSP provided the Niagara Peninsula Conservation Authority (NPCA) with construction details of the Forty Mile Creek diversion and clarified well construction details for MW3c;
- WSP provided the NPCA with additional details with regards to the water budget;
- WSP updated the bedrock topography map to include recent data;
- WSP clarified how wetland features were determined and the extent of water level measurement data prior to extraction (as per MNRF comments). Additionally, the stream hydraulics of Forty Mile Creek were discussed in more detail as per Source Water Protection comments;
- WSP clarified why the deeper aquifer systems can be monitored by only one well (since the system should not impact the deeper aquifer systems) as per Hamilton Water comments; and,
- The analytical parameters for the dewatering discharge were altered by WSP as per Hamilton Water comments.

Cambium and Hamilton Water staff are satisfied with the proposed modifications from Waterford. The ARA Operational Plan has been updated to include the above Notes.

Health Protection Division (Public Health Services)

Public Health Services was a member of the CART team and participated in the review and peer review of the technical studies, including the air and noise studies and the hydrogeological studies. They noted that the peer review should consider the dispersion modelling analysis. They recommended that a complaint response mechanism be incorporated and details provided about the type of logging system and how its maintenance will resolve current issues and prevent future similar complaints. The complaint system should address all potential areas of air, water, vibration environmental impacts and other nuisance issues. Dust management will be incorporated into a proper record keeping system which will demonstrate that mitigative actions are taking place.

Public Health were in support of the recommendations made in the peer reviews for the air, noise and hydrogeological studies, and Waterford is in agreement with the recommendations, and appropriate Notes have been included in the Operational Plan.

Corridor Management Section (Public Works Department)

Corridor Management had no concerns and noted that since there will be no change to the extraction tonnage as Waterford will be moving their operations to their adjacent lands to the west when extraction is completed, the proposed expansion will not increase vehicular demand to and from the site. Further, the haul route will not change and will continue to follow the designated truck routes of the City (Green Mountain Road, Eleventh Road East and Mud Street). They advised that the existing March-April Reduced Load restriction for quarry trucks is still applicable on the designated haul route. All proposed berm materials and fencing along Green Mountain Road must be maintained on private property. No upgrading of the existing farm gate access along Green Mountain Road is required as long as it is used for passenger vehicles and not for trucks.

Niagara Peninsula Conservation Authority (NPCA)

The NPCA was a member of the CART team and participated in the review and peer review of the Hydrogeological Report and the Natural Environment Report.

The NPCA had some high level concerns which are summarized as follows:

- Address impacts to potential habitat in Forty Mile Creek and the southwest creek / ditch and maintain appropriate setbacks and buffers including the submission of a plan which identifies the vegetated buffers surrounding the fish habitat on site;

- Provide setbacks of 40 metres from the bank of any watercourse at all blasting events;
- Provide details for the realignment of the intermittent creek/ditch;
- Ensure that potential damage to Species at Risk and their habitat is mitigated;
- Provide a Flood Conditions Protocol;
- Submit a Sediment and Erosion Control Plan to ensure there is no sediment release into the adjacent watercourse both during construction and during the ongoing operation;
- Show the mitigation measures as outlined in the EIS and Natural Environment Report on the mitigation plan;
- Initiate baseline hydrologic monitoring for the swamp and provide a contingency plan; and,
- Provide a protocol for determining the scale of fractures within Forty Mile Creek and also identify the mitigation measures.

The NPCA has received additional information (e.g., Sediment and Erosion Control Plan, details of the realignment of the intermittent creek / ditch) from Waterford and its consultants to address the above noted concerns. Based on all of the submitted information, the NPCA advised that they do not object to the quarry extension, provided appropriate notes are included on the ARA Operational Plan. As well, the NPCA is satisfied with the volume and rate of sump water being proposed (and currently) being discharged into Forty Mile Creek. All of the NPCA comments have been incorporated into the Site Plans.

Ministry of Municipal Affairs and Housing (MMAH) One-Window Response

The MMAH provided a consolidated set of comments from its partner ministries on July 6, 2017. The comments noted concerns from the Ministry of Natural Resources and Forestry (MNRF) and from the Ministry of Environment and Climate Change (MOECC) regarding:

- surface water impacts to the area's water resources;

- assumptions / calculations made with insufficient data or monitoring equipment, questions about the extent of the groundwater monitoring program;
- rehabilitation post-operations of the quarry including mitigation measures pertaining to the Vinemount Swamp Complex;
- groundwater impacts;
- more data and analysis with regard to air quality, dust and noise impacts. The MNRF requested that Waterford demonstrate how they will protect significant wildlife habitat including that the proposed protection and relocation of the Snake Hibernaculum be completed to the satisfaction of the MNRF; and,
- more information about how potential impacts to Species at Risk habitats for both Bobolink and Eastern Meadowlark will be addressed and to demonstrate how these species and their habitat will be affected, protected and registered under the ESA.

MNRF noted that they were working with Waterford to ensure the successful relocation of a Peregrine Falcon pair that nests on the eastern wall of the existing quarry.

The Ministry of Agriculture, Food and Rural Affairs (OMAFRA) recommended that Waterford demonstrate whether they considered other sites more suitable for aggregate extraction outside of the immediate area, and that those other sites not necessarily be lands adjacent to the existing quarry. They also recommended that if an alternative location cannot be found, that agricultural rehabilitation of all remaining lands within the licensed area be maximized as a first priority to allow the future production of specialty crops. The Ministry also wanted more information on the potential impact of the proposed quarry expansion on surrounding agricultural operations.

The comments also noted that the application was reviewed by the Ministries of Tourism, Culture and Sport (MTSC) and Northern Development and Mines (MNDM).

Waterford has provided supplementary information to the above noted Ministries to address the concerns. A full description of the hydrogeological impacts on ground and surface water and nearby wells and the mitigation measures for the Vinemount Swamp Complex is included in the Analysis and Rationale for Recommendation Section and Appendix "E" to Report PED18029.

As for the agricultural comments by OMAFRA, IBI Planning Consultants provided additional information about lands they considered as alternative locations, not only lands near the existing quarry, but outside Hamilton as well. These included lands within a 35 km radius from Hamilton City Hall and extended to other local municipalities

including Beamsville, Smithville (Niagara Region), Canborough, Cayuga, Hagersville (Haldimand Region), and Brantford (Brant County). IBI Planning Consultants chose a + / - 35 km radius from Hamilton City Hall to create a larger study area as this created a radius to numerous local municipalities on lands east, south and south-west of Hamilton, which is a significant market area, and one which extends well beyond the boundaries of the City of Hamilton. They found that there were only two available resource deposits on the lands; however, those lands had areas of significant ecological importance on them.

Waterford also submitted an Agricultural Impact Assessment from DBH Soil Services Inc. dated November 30, 2017 that concluded that the proposed Vinemount extension would have minimal impact on the surrounding agricultural activities in the surrounding area.

Public Consultation:

In accordance with the provisions of the *Planning Act*, and Council's Public Participation Policy, Notice of Complete Application and Preliminary Circulation for the Rural Hamilton Official Plan Amendment and the Zoning By-law Amendment Applications were sent to 40 property owners within 120 m of the subject lands on October 30, 2015, and a Public Notice sign was placed on the property on October 30, 2015 and was updated on January 18, 2018. Three letters were received as a result of the circulation, attached as Appendix "G" to Report PED18029. The letters identified concerns related to blasting, dust and noise, impact on wells and water supply and impact on property value. These concerns are addressed in the Analysis and Rationale for Recommendation Section of this Report. Notice of the Public Meeting was given in accordance with the requirements of the *Planning Act*.

ANALYSIS AND RATIONALE FOR RECOMMENDATION

- 1) The proposal has merit and can be supported for the following reasons:
 - i) The application is consistent with the PPS (2014) and conforms to the Greenbelt Plan;
 - ii) The proposed quarry extension has undergone a thorough technical review by the Combined Aggregate Review Team, comprising City staff, outside agencies, and peer reviewers and concerns have been satisfactorily addressed; and,

- iii) The proposed quarry extension includes appropriate provisions to ensure protection of the natural environment, agricultural uses nearby and to minimize impacts to surrounding residents.
- 2) The subject lands are currently designated “Specialty Crop” in the Rural Hamilton Official Plan. An Official Plan Amendment is required in order to permit the proposed mineral aggregate use on the subject lands. In addition, the subject lands are identified as “Potential Stone Aggregates” on Appendix “C” – Non-Renewable Resources (Appendix “C” remains under appeal, and therefore the Hamilton-Wentworth Official Plan Map No. 5 applies, which identifies the lands as Stone Aggregates).

All existing licensed mineral aggregate operations in Rural Hamilton are designated Mineral Aggregate Resource Extraction Area on Schedule “D” to the RHOP. This includes the existing Vinemount Quarry. The application submitted by Waterford proposed a re-designation of the lands to the Mineral Aggregate Resource Extraction Area designation. However, staff note that the 2014 Provincial Policy Statement (PPS) amended the policies related to Prime Agricultural Areas, as follows:

- “2.3.5.1 Planning authorities may only exclude land from *prime agricultural areas* for expansions of or identification of settlement areas in accordance with policy 1.1.3.8.
- 2.3.6.1 Planning authorities may only permit non-agricultural uses in *prime agricultural areas* for:
 - a) extraction of *minerals, petroleum resources and mineral aggregate resources*, in accordance with policies 2.4 and 2.5;”

The above policies prohibit a municipality from re-designating lands from prime agriculture to any other designation with the exception of a settlement area boundary expansion (Policy 1.2.3.8 referred to above identifies criteria for settlement area expansion.). Further, Policy 2.3.6.1 identifies that a mineral aggregate operation may be added as a permitted use to a prime agricultural designation, subject to compliance with other policies.

Based on the above, staff are proposing to add a Special Policy Area to the subject lands which will permit mineral aggregate extraction within the “Specialty Crop” designation. While staff understand that the intent of the PPS policies above is to maintain the designation of prime agricultural lands for agriculture, this approach does not seem reasonable when reviewing aggregate operations

below the water table, for which the requirement for full agricultural rehabilitation is not required, or often, not feasible. In the case of the subject lands, agricultural rehabilitation is not proposed due to the extensive amount of below the water table extraction. Staff note that the requirement to add a Special Policy Area to permit aggregate extraction on the subject lands rather than re-designating the subject lands to Mineral Aggregate Extraction Area is inconsistent with the structure of the City's RHOP. However, this is a requirement of the PPS and Greenbelt Plan. As such, staff are supportive of the Official Plan Amendment.

3) In considering an amendment to permit a mineral aggregate use, the RHOP identifies the following studies that must be submitted to support the proposed re-designation:

- Environmental Impact Study;
- Hydrogeological Study;
- Transportation and haul route study; and,
- Noise, vibration and air quality studies.

The applicant has submitted all of the above noted studies except for the Transportation and haul route study. It is noted that the 2013 City of Hamilton Formal Consultation for the proposed extension did not require a Transportation and haul route study since the haul route for the existing Vinemount Quarry will be retained. However, the applicant, in their Planning Justification Report, provided a summary of how the internal and external haul routes meet the Official Plan policies. The haul route to be used is an existing and established route and since the annual extraction limit of the quarry extension will remain the same, the number of trucks exiting and returning to the quarry will remain consistent with historical levels.

The applicant also submitted an Archaeological Assessment of the subject lands. A full review of the results of these technical studies, including peer review where required, is provided in Appendix "E" to Report PED18029, and also further summarized below:

Natural Environment Report (Environmental Impact Study)

Waterford submitted an "EIS and Level 1 & 2 Natural Environment Technical Report" (EIS), completed by Dance Environmental Ltd. and dated August 24, 2015. This report, along with the Hydrogeology and Technical report completed

by WSP, the Tree Preservation Plan (IBI Group), Fish Resource Inventory (WSP Group, Soils Survey (DBH Soils Services) and the Agricultural Impact Assessment (DBH Soils Services), were reviewed by City staff and the NPCA. Since, after consultation with the NPCA and MNRF, it was found that the natural features on and adjacent to the site were not highly sensitive or extensive, it was agreed that it was not necessary to retain a consultant to peer review the EIS. Instead, the Niagara Peninsula Conservation Authority (NPCA), the Ministry of Natural Resources and Forestry (MNRF), the City of Hamilton Planning and the Environmentally Significant Areas Impact Evaluation Group (ESAIEG) reviewed and commented on the report.

Field studies were completed by Dance Environmental Ltd. from February to October 2014 to identify amphibians, fish, plants, snakes, breeding birds, Ecological Land Classification (vegetation communities), incidental wildlife observations, aquatic habitat assessment, crepuscular bird survey (Common Nighthawk and Eastern Whip-poor-will), winter raptors and owls and acoustic bat surveys.

It was found that the proposed extension lands contain a variety of habitats, including deciduous forests, a pond, streams, meadow, agriculture and hedgerows.

The main identified issues were potential impacts to:

- Significant wildlife habitat such as waterfowl stopover and staging areas (terrestrial, aquatic and shorebird migratory stopover areas) including Short-eared Owl wintering habitat found on the berms surrounding the quarry and in 87-Acre Park;
- Significant wildlife such as Peregrine Falcon, Common Raven, and Bank Swallows nesting on the west quarry wall (six species of bat were identified however no Species at Risk bats were found);
- Grasslands Species At Risk on lands to the north of the proposed quarry and a Snake Hibernaculum on the subject lands;
- Grassland birds found in the lands to the north (Wilson's Snipe and Upland Sandpiper);
- Noise on the wildlife populations; and,

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- Woodland in the vicinity of the old quarry (it is noted that during the preparation of the “EIS and Natural Environment Technical Reports, the woodlot located within the southern section of the subject property was deemed by Dance Environmental to be a “significant woodland” because it met the minimum of two criteria including: 1) proximity to a water source and 2) habitat for a Species of Concern, Eastern Milksnake. Subsequent to the preparation of the report, Eastern Milksnake was delisted as a species of concern. Dance Environmental advised Planning staff that no other rare species were observed in the woodlot, and Planning staff since confirmed that the woodlot no longer meets the criteria as “significant”).

Other possible impacts included:

- Hydrogeological impacts to surrounding natural areas (Vinemount Swamp ESA and PSW), the wet meadows and ponds in 87-Acre Park (Vinemount Quarry ESA) and wet meadows Saltfleet Northeast Woods ESA and the Green Ash woodland to the west of the extension area;
- Tree stress caused by lowering the water table; and,
- Impacts to the Vinemount Swamp PSW and how groundwater recharge will decrease as a result of expansion, and how this will affect the wetlands and ponds in the surrounding ESAs.

Also discussed was the possible restoration and improvement to the existing Forty Mile Creek and realignment with natural channel design.

The following are examples of some of the mitigation measures proposed by Waterford to address potential impacts to natural heritage features and functions:

- Silt control fencing and inspection;
- Timing windows to avoid impacts to fish and breeding birds;
- Setbacks from Forty Mile Creek and ESAs (which range from 34 to 44 metres);
- Continued discharge of water from the quarry into Forty Mile Creek;
- Creation of an ecological linkage between the new hibernaculum and the Vinemount South Swamp ESA to the north;

- Dust Management Plan; and,
- Temporary plantings and pond habitat on the quarry floor.

Groundwater levels in the swamp will be monitored to determine if there is any impact on the vegetation or wildlife in the swamp. The NPCA has approved the Monitoring Program for the Vinemount South Swamp: Understorey and Vernal Pool which will be undertaken by an ecologist. Two years of baseline monitoring will be followed by on-going monitoring in three year intervals. If quarry dewatering is found to be causing negative impacts to the flora and fauna, remedial action will be initiated. If required, these actions will be done in collaboration with the NPCA and include surface water being added to the swamp water balance.

Waterford is working with the MNRF to re-create a new Snake Hibernaculum on lands to the west of the proposed extension. If the hibernaculum is not successfully created and utilized by snakes, the existing hibernaculum within the Phase 3 lands cannot be removed. When the MNRF determines the replacement hibernaculum site has been functional for three years and the old hibernaculum site is decommissioned, extraction within this phase may proceed.

A nesting platform has been placed on the east quarry wall to encourage the Peregrine Falcons to nest there. A soil structure will be piled on the existing quarry floor to create temporary nesting habitat for Bank Swallows until the quarry fills with water post-extraction. Since the Woodland is to be removed, MNRF recommended compensation tree planting near the new hibernaculum site. The Rehabilitation Plan now includes one hectare of restored woodland near the new hibernaculum.

Waterford has committed to continuing the ecological habitat enhancement on lands they own to the north of the site. Waterford has partnered with the Hamilton Naturalists' Club (HNC) to develop the "Vinemount Meadows Sanctuary", a 26 hectare former agricultural field which is being restored to meadow (grassland bird and pollinator habitat). These lands include important existing grassland bird habitat and 6.6 hectares of agricultural land to be restored. The public will be able to access the site, which will benefit breeding birds, wintering raptors, reptiles and amphibians, insects and mammals.

Removal of habitat within the extension site is being mitigated by expanding the habitat within the berms (from 4 metres wide to 7 metres wide), planting clusters of vegetation and creating two small ponds on the existing quarry floor to provide temporary habitat. Habitat surrounding the site will be improved by restoration

and adding habitat structures (bat roosts and maternity structures and a Purple Martin nesting house).

Through the mitigation and monitoring measures provided in the Site Plan Notes, the City of Hamilton is satisfied that the issues related to Natural Heritage features and functions have been addressed.

Hydrogeology Study

Waterford submitted a Hydrogeology report titled “*Vinemount Quarry Extension, Level 2 Hydrogeological Study*” prepared by WSP Canada Inc. (WSP) and dated June 23, 2015 which was peer reviewed on behalf of CART by Cambium Inc. The following is a summary prepared by Cambium that describes the extraction and impacts.

- *Proposed Quarry Extension – Background*

The proposed quarry extension is located within the Haldimand Clay Plain, between two east-west trending moraines (the Vinemount Moraine and the Niagara Falls Moraine). The Site is also located within the Forty Mile Creek sub watershed, just east of the drainage divide with the Stoney Creek sub watershed. The Eramosa bedrock escarpment is a predominant feature in the area of the Site and creates two relatively flat lying steppes within the proposed extension lands (the lower, more northern steppe occupying the majority of the extension lands footprint). Agricultural lands surround the site in addition to several Environmentally Sensitive Areas (ESAs) including, the Vinemount Quarry (87–Acre Park), Saltfleet Northeast Woods and Vinemount South Swamp (which includes the woodlot / wetland complex in Lots 7 and 8, Concession 5).

Two branches of the Forty Mile Creek flow through / adjacent to the proposed extension lands. Currently the Forty Mile Creek has been diverted around the Site via a series of berms and ditches and reconnects with the original creek bed just south of the north eastern corner of the existing quarry (WSP Canada Inc., 2015).

Extraction in the proposed extension will not extend deeper than the Decew Formation, ~181 metres above sea level (mASL) in the north-west and deeper to the south and east, due to the presence of low quality bedrock source (from an aggregate product perspective) found at depth. The current quarry is developed below the groundwater table, therefore to maintain dry working conditions, the excavation is dewatered under Permit to Take Water (PTTW No. 3221-5VVN7L). The proposed quarry extension will be dewatered by the current dewatering

infrastructure and it is anticipated that the current PTTW will be able to encompass the additional dewatering volumes.

The following section outlines the high level issues and their resolutions.

- *Potential Impacts to the Vinemount South Swamp Complex*

The Vinemount South Swamp Complex (VSSC) falls within the projected radius of influence of the dewatering that will occur in the proposed quarry extension. WSP had previously installed piezometers in the area of the Vinemount South Swamp Complex and, upon review of the data generated by those piezometers, Cambium concluded that a portion of the VSSC may be groundwater fed (however, data generated from these piezometers were not reliable from a surface water / groundwater interaction perspective due to their construction).

Since the VSSC may be partially groundwater fed, and that it falls within the projected radius of influence of the proposed extension, there is a possibility that the VSSC will be impacted from the development of the extension. As such, Cambium recommended that WSP complete a pumping test on the western extent of the proposed extension to simulate the dewatered conditions of the proposed quarry extension. The pumping test did not adequately represent the effects of dewatering from the quarry. The long term pumping test did influence a drawdown in the shallow bedrock near the VSSC. Two new piezometers were installed in the swamp complex and had drastically reduced precipitation influenced head fluctuations than the early piezometers, indicating a much better seal. These two piezometers had no observable impacts from pumping and as such indicate that there is little concern for under draining from the quarry dewatering.

Extraction Depth

The extraction depth of the proposed expansion should be restricted to the top of the Decew formation, instead of a pre-determined depth. This will reduce the possibility of extracting lower quality material (which had happened in the existing quarry). WSP determined the elevation of the Decew formation from the new pumping well and monitoring wells, and has suggested this contact is at elevation 181 masl at the northwest extent of the proposed excavation area.

Groundwater Declines in Deeper Aquifer Systems

Cambium indicated that groundwater declines have been observed in the deeper aquifer systems found in the area, possibly as a response to the existing operations. WSP agreed to monitor the water levels in the deeper aquifer

system. The pump test included a new monitoring well screened in the deeper unit and the pump test monitoring did not suggest an influence to the deeper system.

Pumping Test

A pumping test report was provided by WSP documenting the methodology and observations of a pump test program that included the installation of two new well monitoring locations, two new drive points in the VSSC, and a single pumping well. The pumping included a stepped drawdown test that concluded the optimal pumping rate and indicated a poor well efficiency, suggesting the available groundwater in the upper bedrock aquifer and its inflow to the well was limited by the well construction or placement. As such, the pumping was a poor indication of dewatering influences expected from the quarry dewatering. The pumping test proceeded for 212 hours (almost nine days), with three interruptions due to equipment malfunction. The pumping rate was a nominal 13.3 L/min, equating to a cumulative pumping volume of roughly 160 m³ over the 8+ days of pumping. The drawdown effect was reported as a circular cone of influence, however the figures indicated a preferential drawdown in the east-west direction, stemming from the observed drawdown of ~20cm in a well ~340m east of the pumping well (BH 14-17) and a ~4cm drawdown in a well a similar distance south of the pumping well (BH 104). The distance – drawdown plot indicated a cone of influence ~ 224m while the report indicates a radius of influence in the ~400m range. Cambium believes the distance drawdown plot incorporates less than observed drawdown in monitoring wells given it uses the drawdown reported in Table 2.1 (WSP Level 2 Hydrogeological Study, June 23, 2015) and not the greater drawdown observed from Figure C-2 (WSP Hydrogeological Study, 2015) for the same monitoring wells (MW 14-17 and MW 15-17) and Figure C-6 (WSP Hydrogeological Study, 2015) for monitoring well BH 204. Considering the preferential elongation, which Cambium notes coincides with the earlier comments of an east-northeast – west-southwest trending regional joint pattern, coupled with the understated distance drawdown relationship suggests a higher potential for influence in the residential supply wells along 8th Road East than reported.

The time-drawdown plot for the pumping well appears to steepen through the course of the pump test while the distance drawdown plot appears to flatten in distance from the well. This suggests the radius of influence intercepted a barrier boundary. The existing quarry 440 m to the east presents a plausible barrier and as such Cambium believes the barrier effect is due to the current excavation. This observation suggests the drawdown extends further once the barrier is intercepted as the potential for recharge from this direction is absent.

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The effect may include a greater influence in those residential supply wells along 8th Rd E than originally reported, these wells are currently included in the monitoring and mitigation program and if such influences materialize, Cambium is of the opinion that the mitigation solutions will be adequate (well deepening, storage, etc.) to maintain sustainable drinking water supplies.

The report suggests the isolation between the surface water (swamp complex and Forty Mile Creek) and the underlying bedrock is present as earlier presented, and Cambium believes the report adequately addresses these concerns.

87-Acre Park

Cambium recommended that some of the existing wells in 87-Acre Park be monitored as part of the regular monitoring program. WSP agreed with this recommendation; however as these wells are monitored by the City Landfill Group, who have agreed that an arrangement will be made with Waterford to monitor.

Issues Raised by Other Agencies

The other Agencies that provided comments on the original supporting documentation included the Ministry of Natural Resources and Forestry (MNRF), the Ministry of Environment and Climate Change (MOECC), City of Hamilton Source Protection Planning (SPP) and the Niagara Peninsula Conservation Authority (NPCA). Cambium has advised that the issues raised from each of these parties were relatively minor or were resolved through subsequent discussions. Some of the resolutions to the issues raised included the following:

- WSP provided the NPCA with the construction details of the Forty Mile Creek diversion and clarified well construction details for MW3c;
- WSP provided NPCA with additional details with regards to the water budget;
- WSP updated the bedrock topography map to include recent data;
- WSP clarified how wetland features were determined and the extent of water level measurement data prior to extraction (as per MNRF comments). Additionally the stream hydraulics of Forty Mile Creek were discussed in more detail as per SPP comments; and,

- WSP clarified why the deeper aquifer systems can be monitored by only one well (since the system should not impact the deeper aquifer systems) as per SPP comments.

The analytical parameters for the dewatering discharge were altered by WSP as per SPP comments.

The MOECC indicated that the water well survey completed by WSP was not completed to the specifications of the “Technical Guidance Document for Hydrogeological Studies in Support of Category 3 Applications for Permit to Take Water”. However WSP considers the water well survey to be in compliance with the aforementioned document. Cambium agrees with WSP on this matter.

Summary of Quarry Effects

The MOECC, MNRF, NPCA and City of Hamilton Source Water Protection outlined several issues associated with the proposed extension of the quarry. The issues raised included the:

- Assumptions / calculations made with insufficient data or monitoring equipment,
 - extent of the groundwater monitoring program as the proposed extension falls within a Highly Vulnerable Aquifer Zone; and,
 - mitigation measures pertaining to the Vinemount South Swamp Complex.
- WSP indicated that since the publication of the Hydrogeological Study, seven (7) monitoring wells and three (3) drive points were installed west of the proposed extension property, and subsequently, two new monitoring wells, two new drive points and one pumping well. The results of the installations indicated that downward gradients exist within the Vinemount South Swamp Complex (although Cambium interpreted the information differently, as outlined above). Therefore, WSP provided clarification with regards to their assumptions / calculations and indicated that there is in-fact sufficient monitoring equipment installed at the Site, particularly in consideration of the new wells and the observed nil pumping effect on the new drive points.

WSP indicates that modelling is not required since the expansion will be almost identical to the current quarry, and as such, the existing conditions should be assumed to exist within the future development. The monitoring program was further clarified by WSP, and that there should be no impact to the groundwater and surface water quality since the only threat to these systems would be spills

of fuels or other chemicals (of which there are controls / best management plans in place).

Cambium considers the response of WSP to the comments of the Agencies and themselves are satisfactory and are satisfied that appropriate mitigation measures to address surface and groundwater impacts have been identified and included in the updated monitoring and mitigation plan provided by WSP. Further, they believe that the proposed improvements to the Monitoring and Mitigation Plan will ensure that all potentially impacted wells will be included in the plans and that appropriate response to the well owner's concern will be provided. Finally, Hamilton Water staff are satisfied with the proposed modifications from Waterford. The ARA Operational Plan has been updated to include the above Notes.

Noise

Aercoustics Engineering Limited prepared a noise assessment of the proposed quarry extension in their report entitled "Proposed Vinemount Quarry Extension – Noise Impact Study", dated April 17, 2015. The study assesses the potential noise impact at surrounding sensitive receptors, in accordance with MOECC Guideline NPC-205.

The noise predictions were based on the predictable worst case noise impact for each of the aggregate quarry operation areas at each of the receptors. This represented a design case where the quarry is running at full capacity with all of the equipment operating simultaneously and at locations where noise impact is highest for each receptor. The majority of the time during quarry extraction operations, the work would be occurring in other areas of the site with lower associated noise impacts. Noise impacts of the operation were predicted and where MOECC sound limits were calculated to be exceeded, noise control measures were modelled and the noise impact recalculated. This process was repeated until the sound level limits were satisfied.

The study found that with the recommended Noise Control Measures in place, the sound levels at all sensitive points of reception would be within MOECC recommended sound level limits during quarry operation. It is noted that Noise Control Measures must be identified and detailed on the ARA Operational Plan. The measures are separated into those required overall and those required per each individual phase. At a high level, the measures relate to:

- berming requirements;

- hours of operation limited to daytime hours only;
- operating equipment limited to:
 - 1 quiet rock drill;
 - 2 extraction loaders;
 - 2 shipment loaders;
 - 1 processing plant; and,
 - 30 truck trips per hour.
- maximum noise emission levels for specific quarry equipment (e.g., portable processing plant can't exceed 85 dBA);
- processing equipment must occur on the quarry floor at an elevation of 171. mASL or lower; and,
- maximum sound power levels of equipment.

During phase 1 of the extraction operations, the portable processing plant shall be positioned within 100 m of the south working face.

During phase 2, an acoustic barrier with a minimum height of 10 m shall be located between the processing equipment and specific receptors. The barrier must be solid, with no gaps or openings and take the form of a quarry face, stockpile, acoustic fence, ISO container or combination of any of these.

During phase 3, Berm A shall be installed at the south portion of the Phase 3 lands and extend to a length of 380 m. The berm shall remain for the lifetime of the quarry. A portable processor cannot operate within 200 m of the south extraction limits. An acoustic barrier with a minimum height of 10 m shall be located between the processing equipment and specific receptors and be within 50 m of plant equipment.

It is noted that the annual tonnage limit for the existing quarry is 900,000 tonnes, which is the same annual tonnage limit as the proposed extension. Shipment trucks will continue to exit onto Tenth Road East and proceed east on Green Mountain Road East. This is the existing haul route that is currently used. As such the off-site truck noise will not change.

The Noise Study was peer reviewed by Jade Acoustics. The peer review generally agreed with the recommendations of the noise study, but required some revisions and clarifications. Aercoustics Engineering Ltd. responded to the requests as appropriate and provided the additional clarifications required as well as additional notes on the Operational Plan.

Blasting (Vibration)

Explotech Engineering Ltd. prepared a blasting impact assessment entitled “Blasting Impact Assessment – Waterford Sand & Gravel Limited, Vinemount Quarry Extension”, dated April 8, 2015. The Report assessed the vibration levels based on the Ministry of Environment and Climate Change (MOECC) Model Municipal Noise Control By-law (NPC-119) in regard to guidelines for blasting in Mines and Quarries in order to assess the impact of proposed blasting operations and extraction methods on the surrounding third-party receptors and waterbodies, as it pertains to ground borne vibrations and air overpressures induced by such operations.

They carried out a field study at the existing quarry in order to establish a site-specific vibration and overpressure database for the purpose of developing ground vibration and overpressure prediction regression relationship (formula) based on the USBM model.

The Blast Impact Analysis concluded that vibration and blast impacts from the Vinemount Quarry extension which could impact adjacent sensitive land uses will meet the MOECC Model Municipal Noise Control By-law limits subject to the recommendations noted implementing the following to meet MOECC requirements of NPC-119 monitoring plan:

- All blasts shall be monitored for both vibration and overpressure at the closest privately owned sensitive receptor adjacent to the site and monitoring will be performed by an independent third party engineering firm;
- If NPC-119 limits are exceeded, blast designs and protocol shall be reviewed prior to any subsequent blasts and revised accordingly in order to return the operations to compliant levels;
- Blast designs shall be continually reviewed with respect to fragmentation, ground vibration and overpressure and shall be modified as required;
- Once the blasting (in future phases) reaches a 200 metre separation distance from any off site structure or residence, accumulated blast vibration data and

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designs shall be reviewed by a qualified blast consultant prior to proceeding closer in order to ensure suitable parameters are employed;

- Blasting procedures such as drilling and loading shall be reviewed on a yearly basis and modified as required; and,
- Detailed blast records shall be maintained and the use of MOECC recommended information for the body of blast reports be used.

The Blasting Impact Assessment was peer reviewed by DST Consulting Engineers, the CART peer reviewer, on December 7, 2016. The peer review was in agreement with the findings of the Blasting Impact Assessment, and agreed with the assessment of the structural impacts and water well impacts. The review noted that the existing Vinemount Quarry has been in operation for many years, and has not received any significant reported complaints from the closest neighbouring properties related to vibration and overpressure induced by the blasting operations. The peer review also notes that the blasting parameters and depth of the proposed extraction will remain the same as those presently employed in the existing licensed quarry.

The review advised that the recommendations of their drilling and blasting experts and consultants should be followed to address any complaints in a timely and professional manner and that on-going monitoring of blasting occur throughout the quarry operation to ensure that compliance is achieved. This monitoring requirement has been included on the ARA Operation Site Plan.

Air

RWDI prepared an air quality study entitled “Vinemount Quarry Expansion – Air Quality Assessment”, dated May 4, 2015. The report reviewed potential air quality emissions resulting from the proposed quarry extension, and compared them to provincial standards to determine if there would be any health or nuisance aspects arising from the proposed extension.

Based on the modelling, the Study concluded that there will be no health impacts expected from the proposed quarry extension. With regard to nuisance dust impacts, the Study found that there are a small number of residences that could be impacted, but that the proposed noise and dust berms will provide adequate mitigation. The Study also noted that Waterford must post on-site and implement the MOECC-approved Best Management Practices Plan for the Control of Fugitive Dust Emissions.

The Air Quality Study was peer reviewed by Jade Acoustics. The peer review was in agreement with the overall conclusions of the Study, but required some additional information and clarification which was subsequently provided to the satisfaction of the peer reviewer. The requirement to post and implement the Best Management Practices Plan has been included as a Note on the Operational Plan.

Archaeology

Archaeological Research Associates (ARA) prepared an archaeological assessment, entitled “Stage 1 and 2 Archaeological Assessment of the Vinemount Quarry Extension”, and dated July 3, 2014. As part of the assessment, four find spots were located, three of which were not recommended for further assessment. A Stage 3 Assessment was recommended in the fourth find spot (AhGw-294), located in the Phase 3 extraction area of the subject lands. Subsequently, the Ministry of Tourism, Sport and Culture (MTSC) approved a request by Waterford that the required Stage 3 Assessment not be undertaken until after the subject property is licensed, but to ensure protection of the site in the interim. The following Notes were added to the Operational Site Plan:

- A 20.0 metre Protection Area must be provided around the area and marked by a temporary barrier prior to the commencement of construction / extraction and be considered a “no-go” zone until the associated Stage 3 Archaeological Assessment report (and Stage 4 mitigation report, if required) has been accepted by the Ontario Public Register of Archaeological Reports and revised recommendations are made;
- Within 50 metres of the Protective Area: Waterford must retain a licensed consultant archaeologist to monitor all construction activities occurring within 50 metres of the protected area;
- Waterford must instruct all on-site quarry employees and subcontractors that no construction activity can occur within 50 metres of the protected area unless a licensed consultant archaeologist is present;
- All grading and soil activities within 50 metres of the protected area must be inspected and monitored to verify the effectiveness of the avoidance and protection strategy;
- The Ministry of Tourism, Culture and Sport (MTCS) must be notified immediately if alteration of the site is observed at any time during construction;

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- After grading and other soil disturbing activities within 50 metres of the protection area is completed, a licensed consultant archaeologist must inspect and report to the MTCS on the effectiveness of the avoidance strategy; and,
- If any new archaeological remains are uncovered during construction, the licensed consultant archaeologist is empowered to stop construction. The consultant archaeologist, in consultation with Waterford and the Ministry of Tourism, Culture and Sport, will then conduct any follow-up archaeological assessment as deemed appropriate, whether it's a Stage 3 assessment or Stage 4 mitigation of development impacts.

With the exception of the findspot AhGw-294 (and its protection area), the assessment received clearance on July 30, 2014 from the Ministry of Tourism, Culture and Sport for the remainder of the extension lands. In addition, Planning Staff, as part of the CART review, also reviewed the documents and are of the opinion that Findspot 1 will be adequately avoided and protected during any on-site disturbance. They concur with the assessment and MTCS that the balance of the lands may be considered partially cleared for the purposes of extraction with the exception of Findspot 1 and the corresponding buffer. Staff advise that Findspot 1 and its 20 metre protective buffer should be marked by a temporary barrier (silt fence) prior to the commencement of soil disturbance and that a licensed archaeologist should monitor all construction activities occurring within 50 m of the protected area. This has been included as a condition on the Site Plan Notes.

Agricultural Soil Assessment

DBH Soil Services Inc. prepared a soil survey in their report "Soil Survey and Canada Land Inventory (CLI) Classification", dated April 2015. Their findings indicate that the property is characterized by three separate soil classifications including: a) Haldimand Silty Clay Loam, b) Lincoln Silty Clay Loam and c) Chinquacousy Silt Loam with the majority of the property defined as "disturbed soil" or low quality agricultural land. Only 18.4 percent of the subject lands are identified as being Class 1 – 3 soils within the Canada Land Inventory and those soils are found in three fragmented pockets, none of which is larger than 3.0 hectares. Notwithstanding that the subject lands were designated "Specialty Crop" in the Greenbelt Plan and the RHOP, DBH concluded that the soils identified on the subject lands have predominantly Poor, Very Poor and Unsuitable ratings for the production of speciality crops.

Agricultural Impact Assessment

DBH Soil Services Inc. prepared an Agricultural Impact Assessment in their report entitled “Waterford Sand and Gravel Limited – Vinemount Quarry Extension Agricultural Impact Assessment”, dated November 30, 2017. DBH evaluated operations and agricultural activities in a study area approximately 1 km radius from the proposed extension lands. The report documented the methodology, findings, conclusions and mapping that were completed for the Assessment. A total of six agricultural facilities were noted in the Study Area, with four facilities associated with cash crop operations, one with a vineyard and one facility with livestock. The remaining lands were described as areas in decline for agriculture, land fragmentation, non-local ownership and rural nonfarm residences. The proposed quarry extension is not expected to be a great source of an increase in traffic or an increase in traffic related impacts to agriculture as the transportation routes in the area are already well travelled by non-farm vehicles. Further, quarry traffic will continue to use the existing entrance/exit and haul routes, and that the tonnage limit will remain unchanged from the present condition. As well, the assessment indicated that there would be no agricultural water use impacts on any of the adjacent lands.

Cultural Heritage

The subject property does not contain any Built Heritage properties (e.g., properties designated under Part IV and Part V of the Ontario Heritage Act). There are no built heritage resources, categorized as per the above, within 50 m of the subject lands.

Based on all of the above, it is staff’s opinion that the applicant has addressed the requirements of the Rural Hamilton Official Plan with regard to the requirement to submit technical studies in support of the mineral aggregate application. These studies have been fully reviewed by members of CART, and peer reviewed where required. Thus, staff are supportive of the amendment to the RHOP in this regard.

- 4) Additional policies that must be considered with regard to evaluating the propose Official Plan Amendment relate to requirements for site rehabilitation. These policies are summarized in Appendix “D” to Report PED18029, and further considered herein.

Upon completion of extraction in approximately 25 to 30 years, the subject lands, including the existing quarry, are proposed to be rehabilitated to a lake and associated features, as rehabilitation to an agricultural standard is not possible or

desirable due to the extensive below water table extraction which will occur. This will occur naturally over several years as ground water and rain water fill the excavated area. The proposed lake and associated natural features (wetlands, woodlands, grasslands and other vegetated area) will contribute to the ecological function of the area, and has been planned in consideration of the surrounding area, including future rehabilitation plans of adjacent lands owned by Waterford. The plan includes the creation of the following:

- Approximately 80 ha of permanent lake when dewatering ceases and appropriate fish species to be introduced into the quarry to provide a food base for water birds;
- Offsite ecological linkages to the west associated with the Ash Swamp and grassy wetland will be maintained, widening of berms along the western and northern quarry extension and enhancement of meadow habitat off site to the north in the Vinemount Meadows Sanctuary to increase the extent of ecological linkages for grassland birds, pollinators and other wildlife;
- Native species planting of a wildlife corridor from the 991 Green Mountain Road pond;
- Ongoing partnership with Hamilton Naturalist Club to create and manage the 16 ha meadow nature sanctuary to the north on lands owned by Waterford;
- Approximately 4.6 ha for berms (3.0 – 6.0 m perimeter berms along the western boundary and 1.0 – 2.0 m high berms along the western and northern boundary which, after extraction will be retained with vegetated grass and herb covering to provide grassland bird and winter raptor habitat);
- Approximately 1.1 ha along the western portion, for a 4.0 high perimeter berm prior to extraction in Phase 3 is proposed to provide noise attenuation but after extraction is complete, the topsoil will be used for rehabilitation, and though the lands are only 15.0 m wide, will be available for agricultural use;
- 0.4 ha along the southern limit to be occupied by a 4.0 berm; and,
- 0.2 ha along the southern boundary will, in Phase 3, include a 7.0 m high berm extending across the entire frontage for noise, blasting, air quality and visual attenuation. After extraction, the lands will be returned to an agricultural use.

Provincial and local planning policies include requirements related to rehabilitation. With regard to mineral aggregate extraction on prime agricultural lands, the policy direction requires prime agricultural lands to be rehabilitated to an agricultural condition, except if a substantial amount of quarrying below the water table prohibits agricultural rehabilitation. In such a case, agricultural rehabilitation is not required, provided alternative locations were considered by the applicant and found unsuitable, and that agricultural rehabilitation in remaining areas (not below the water table) is maximized where possible.

For the proposed Vinemount extension, 83% percent (37.7 ha) of the extraction area will be below the water table. The 37.7 ha will be extracted / rehabilitated to a lake with the undisturbed balance limited to the north, west and south perimeter / fringe of the site. As a result, agricultural rehabilitation is not proposed. The remaining undisturbed balance (7.0 ha) of the lands that would not be extracted and not be rehabilitated to a lake will be rehabilitated to other uses which are discussed in the following section.

As required by the policy framework, the applicant has reviewed alternative locations for the proposed quarry extension. Not only did the applicant review alternate locations in proximity to the existing Vinemount Quarry, but also lands within a 35 miles radius from Hamilton City Hall (including Niagara Region, Brant County and Haldimand Region). Limiting the search for alternative sites to those in proximity to the existing quarry operations is justified and acceptable given the benefits in using existing haul routes, processing area and other infrastructure. The applicant notes in the Planning Justification Report that the lands to the east are owned by the City and referred to as 87-Acre Park and contain sensitive ecological features. The lands to the south contain eight separate parcels that are mostly rural residences and designated as Core Environmental Area and Greenbelt Natural Heritage System. These lands contain sensitive ecological features and are fragmented into smaller parcels and therefore are not suitable as extraction lands. Lands to the north are owned by Waterford and are designated Greenbelt Natural Heritage and do not have access from Tenth Road East and would necessitate the relocation of the Dofasco 2000 Trail and re-routing Forty Mile Creek. Even if appropriate access could be secured, the individual parcel is too small to warrant the up-front cost of the planning and licensing process. Finally, a parcel of land to the west is also owned by Waterford, and although these lands contain a similar quality of bedrock, quarrying these lands in advance of the subject lands ("skipping over the subject lands") would be an illogical progression especially in terms of the required infrastructure to operate the quarry. As well, the western portion of the lands contain a Core (Environmental) Area Greenbelt Natural Heritage System. An additional parcel to the west and fronting onto Green Mountain Road has been

recently acquired by Waterford, but it is isolated by the Forty Mile Creek (South Branch) on the northern boundary and by a 20 m wide unopened road allowance on the east side. Finally, as an individual parcel, the parcel is too small to warrant extraction as the maximum extraction depth could not be achieved, resulting in sterilization of much of the bedrock material. As such, staff are satisfied that alternative locations were examined and not deemed to be preferred alternatives.

With regard to rehabilitation of the remaining area not below the water table, there is a benefit to rehabilitating these lands to natural features which will promote connectivity and biodiversity.

With regard to natural heritage features, the policies require that rehabilitation will be carried out to a state of equal or greater ecological value and that the long term integrity of the entire site shall be maintained or restored. The health and diversity of key natural heritage or hydrologic features shall be maintained or restored / improved, and remaining aquatic features after extraction shall be enhanced. In this regard, it is noted that the rehabilitation plan includes 7.7 ha that will not be extracted and will not be rehabilitated to a lake and will be rehabilitated to the following uses post extraction:

- A 4.6 ha area which are lands currently occupied by 3.0 – 6.0 m perimeter berms along the western boundary and 1.0 – 2.0 m high berms along the western and northern boundary of the site. Post extraction, they will be open space and integrated into the surrounding eco system and will be retained with vegetated grass and herb covering to provide grassland bird and winter raptor habitat. A 2.0 high berm along the northern perimeter boundary encompasses the documented Category 3 Bobolink Habitat;
- A 1.1 ha area along the western portion, currently in agricultural production, and where a 4.0 m high perimeter berm is proposed prior to Phase 3 for noise attenuation. Once extraction is completed and the berm removed, the topsoil will be used for rehabilitation and will be available for agricultural use even though they are only 15 m wide;
- A 0.4 ha along the southern frontage is occupied by an existing 4.0 high berm. An additional 0.2 ha area along the southern boundary is currently in agricultural production (row crops). Prior to extraction in Phase 3, the 4.0 m high berm will be increased in height to 7.0 m and enlarged so that it extends across the entire frontage to provide necessary noise / visual buffer attenuation. Post extraction, the berm will be removed with the material

(including topsoil and subsoil) used for rehabilitation. These lands will be returned to an agricultural use.

- An 0.7 ha area occupying a portion of the existing northern 2.0 high berm and a portion of the agricultural field (soybean field), of which 0.4 ha is within the 15.0 m setback and will remain undisturbed. The balance (0.3 ha) will be extracted.

Progressive rehabilitation of the site will occur. Lake filling will not commence until all of the aggregate is extracted from the proposed extension. Once quarrying is complete and the final Phase 3 quarry sides slopes are backfilled and stabilized, the dewatering pumps will be removed, allowing the groundwater to stabilize. Eventually the quarry will re-fill (by ground and rain water) to an elevation of approximately 188.0 mASL creating an approximately 80 ha lake.

Based on all of the above, staff are satisfied that the proposed rehabilitation plan conforms to provincial and local planning policy requirements and staff are supportive of the proposed amendment to the RHOP to permit the mineral aggregate use.

- 5) An application to amend the Zoning By-law to permit the mineral aggregate use is also required. A license under the *Aggregate Resources Act* cannot be issued by the MNRF until such time as the site is appropriately zoned. The subject lands are currently zoned Agriculture “A1” Zone in the City of Hamilton Zoning By-law No. 05-200. In order to permit the aggregate use, the lands must be rezoned to the Extractive Industrial (M12) Zone in the City of Hamilton Zoning By-law No. 05-200.

The Extractive Industrial (M12) Zone contains regulations requiring minimum setbacks for excavation and buildings or structures from property lines, residential uses and street lines. The Zone also restricts the location of stockpiles in relation to residential uses and property lines, and further requires fencing around the perimeter of the licensed area, and a planting strip adjacent to a street line or a residential use. The applicant has indicated that they will conform to all of the M12 regulations.

- 6) Three letters have been received from local residents regarding the subject applications. The letters raise concerns related to blasting, dust and noise, impact on wells and water supply, impact on property value and compensation to land owners, impact on agricultural land (Attached in Appendix “G” to Report PED18029)

Blasting, Dust and Noise

The letters raised concerns over the potential impact of blasting (vibration), dust and noise on nearby homes resulting from the proposed extension. In this regard, staff note that technical studies have been completed and peer reviewed related to blasting (vibration), air quality (dust) and noise impact of the proposed extension. The studies recommend mitigation measures to be employed by Waterford which will ensure that the quarry operates within all applicable provincial guidelines related to vibration, air quality and noise. The mitigation measures include a combination of berming, restriction on hours of operation / equipment, restriction on location of certain machinery, and restriction on the size of blasts in proximity to residential uses. In addition, Waterford must employ and follow a Best Management Practices Plan for the mitigation of fugitive emissions.

Property Value

A concern was raised regarding the loss of property value resulting from the proposed quarry extension. While staff acknowledge this concern, it is noted that an aggregate operation already exists adjacent to the subject site. Staff have no empirical evidence to support the loss of property values resulting from the extension of the quarry.

Landscaping and Tree Protection

The letters raise concern over the impact of the quarry extension on the changes to the natural landscape and that trees will be removed and wildlife forced from their habitat. During the start-up stage of Phase 1, Waterford will plant a mixture of native deciduous and coniferous trees (red maple, sugar maple, red oak, white oak, honey locust, white spruce, blue spruce, larch and bald cypress) along the Green Mountain Road frontage every 20.0 metres to create a long-term shade canopy. The tree stock shall be a minimum of 1.5 metres in height at time of planting.

Haul Route and Maintaining Road Conditions

The letter raised concern over the poor road conditions along the designated truck route from the quarry caused by the heavy dump truck loads and numerous trips especially on Mud Road between 10th Road and Centennial Parkway. Staff note that designated truck routes are managed and maintained by the City who maintain the roads on a regular basis.

The letter also requested that berms be constructed along the entire perimeter of the existing and proposed quarry and that vegetation on the berms along Green Mountain Road and around the quarry perimeter include some deciduous trees as well as shrub clusters. As noted elsewhere in the report, berms will be constructed around the perimeter of the quarry and vegetation (vegetated grass and herb covering) will be planted and maintained to provide grassland bird and winter raptor habitat. With regards to the planting of trees and shrubs, 1.5 meter high boulevard trees will be planted (some have been already) along the Green Mountain Road frontage at the toe of the berm and include red maple, sugar maple, elm and black oak. Native trees and shrubs will be planted along the north side of Green Mountain Road along the frontage of the existing Vinemount Quarry frontage. This vegetation will be planted randomly in clusters and planted 2.0 metres on centre and include Serviceberry, Nannyberry, Gray Dogwood, High Bush Cranberry and White Cedar.

Steel Grating System

The letter requested that the steel grating system on the internal haul road be cleaned out whenever the accumulated debris reaches the bottom the grating. This has been done by Waterford and is part of their ongoing operations. They also requested more information about what whether any scrap will be stored within the existing quarry which is not the case.

Holding Annual Meetings

One letter raised concern about potentially cancelling the annual meetings that Waterford holds with the residents and that all property owners within 1 km should be invited. Waterford hosts an annual community meeting at the Stoney Creek Library each fall where they answer all questions and respond to issues raised. Also invited are MNRF, MOECC, the Ward Councillor and the City's Traffic Department. In advance of the meeting, Waterford circulates a survey to nearby residents to inquire whether they have noted any negative changes over the past year that could be attributed to the operation of the quarry. As well, and as prescribed by the ARA, the quarry phone number is posted at the entrance / exit. If written or call-in complaints are received during the year, Waterford attempts to be responsive to each of their concerns. As part of the proposed extension, and as a condition of their license, annual meetings will continue based on a protocol in their Operational Plan (e.g., meeting held at least 30 days after the release of the annual groundwater monitoring report; 10 day notice of meeting; records of dates when portions of the primary haul route were swept; summary of complaints, etc.).

OUR Vision: To be the best place to raise a child and age successfully.

OUR Mission: To provide high quality cost conscious public services that contribute to a healthy, safe and prosperous community, in a sustainable manner.

OUR Culture: Collective Ownership, Steadfast Integrity, Courageous Change, Sensational Service, Engaged Empowered Employees.

It should be noted that Waterford representatives have been in contact with the three letter writers several times during the application process, as they were also objectors to the ARA licence, and Waterford advises that their concerns have been addressed. The letter writers have notified the MNRF by way of a sign-off letter that they are satisfied with the resolution of their concerns.

ALTERNATIVES FOR CONSIDERATION

If the proposed Official Plan Amendment and Zoning By-law Amendment are not approved, the subject lands could continue to be used for the uses permitted under the Agricultural “A1” Zone of the City of Hamilton Zoning By-law, including agricultural uses or one single detached dwelling per lot.

If the proposed Zoning By-law Amendment is not approved, the MNRF will not approve the license under the *Aggregate Resources Act*.

ALIGNMENT TO THE 2016 – 2025 STRATEGIC PLAN

Economic Prosperity and Growth

Hamilton has a prosperous and diverse local economy where people have opportunities to grow and develop.

Clean and Green

Hamilton is environmentally sustainable with a healthy balance of natural and urban spaces.

APPENDICES AND SCHEDULES ATTACHED

Appendix “A”: Location Map

Appendix “B”: Amendment to the Rural Hamilton Official Plan

Appendix “C”: Amendment to Zoning By-law 05-200

Appendix “D”: Policy Review

Appendix “E”: CART Report (Technical Studies Summary

Appendix “F”: Phasing Plan

Appendix “G”: Letters from Property Owners

JC:jp