



SERA

Socially and Environmentally
Responsible Aggregate

Draft Standards

JUNE 1, 2011



A Note on Authorship and Process

These draft standards are the result of a collaborative effort between Holcim (Canada) Inc., a leading aggregate company in Canada, and Environmental Defence Canada, an NGO with a long history of leadership on environmental issues, often involving the aggregate industry.

Holcim Canada is concerned that the lengthy and expensive regulatory processes and the uncertain outcomes that currently characterize the licensing of aggregates facilities threaten the long-term viability of the aggregates industry in Canada. A threat to this industry has substantial implications to other industries which rely on a continuing source of affordable aggregates.

Environmental Defence, while primarily concerned in this context with the environmental impact of aggregate operations, recognizes that the time and resources consumed by the licensing process would be better devoted to ensuring better, more predictable, environmental outcomes.

Each organization had in recent years explored the concept of an aggregate standard on its own: Environmental Defence and its community case supporters through their “Green Gravel” strategy and Holcim Canada as part of its goal to be the industry leader in responsibly sourced construction materials.

This document begins the process of establishing a voluntary approach, using an independent certification standard, to encourage aggregate companies to go above and beyond existing regulatory requirements to not only obtain licences to operate at given sites but to better earn their social licence to operate. In drafting and releasing these standards, it is intended that a broader group of stakeholders will be actively engaged as the standards are revised and finalized. A broader group will also be involved in creating the organization to oversee the standards’ implementation. Both Holcim (Canada) Inc and Environmental Defence believe that this approach will enable the aggregate industry and environmental community to better resolve their differences, and chart a sustainable and responsible course for aggregate extraction and consumption in Ontario.

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Introduction and Purpose

Ontario could benefit from improving the siting, operation, processing, rehabilitation, and use of the stone, sand and gravel – commonly termed “aggregate” — that goes into the building of our province. The public has a right to expect that the aggregate industry is meeting or exceeding best social and environmental management practices and is taking the resource from appropriate locations. A robust, independently certified standard, as proposed in detail in this document, will go a long way to providing this assurance.

The importance of aggregate for a variety of needs is not debatable. Aggregates are used in the construction of highways, dams and airports, as well as residential, industrial and institutional buildings such as hospitals, schools and arenas. Aggregates are also important ingredients in a number of manufactured products such as glass, coated paper, paint and pharmaceuticals, and are components in the manufacture of steel, aluminum and plastic. Ontario’s public institutions are by far the largest users of aggregates in the province. While aggregates are essential to the way we live, aggregate quarrying and transport generate community concerns over environmental, wildlife and hydro-geological impact, noise, air pollution, truck traffic, perceived reductions in property values, and, — in some instances, — a legacy of abandoned pits and quarries.

Moreover, Ontario’s geography poses a significant challenge:

- High value stone, sand, gravel are often comingled with other significant natural features and located in areas of rich, important biodiversity;
- In southern Ontario, many of these deposits occur in the Niagara Escarpment, the Oak Ridges Moraine, Greenbelt, or in the Natural Heritage System and similarly designated or functioning areas with significant natural features and functions that are close to dense population centres;
- The natural environments close to the most dense population centres and agricultural areas typically have seen the greatest loss of ecological values and connectivity, making remaining natural areas all the more valuable; and,
- It is anticipated that millions more people will move to Southern Ontario in the coming decades, exacerbating conflicts between infrastructure needs and land use.

In addition to these increasing pressures on the land base, the current proponent-driven extraction siting regime and regulatory and planning approvals are subject to a lengthy, highly expensive and contentious process that creates uncertainty for the industry, community and other stakeholders. Frequently, no one truly wins under these circumstances.

It is against this backdrop that the SERA Standards document has been drafted. It is intended to frame discussions towards ensuring that a robust, independent process for ensuring certified socially and environmentally responsible aggregate extraction is in place. It is proposed that the standards will be monitored by independent, third party auditors. While the governance model for the further refinement, finalization and oversight of the standards (and auditors) will be a subject for discussion, it is intended to be consistent with the ISEAL alliance’s code of good practice for standard-setting (see Appendix 3) and to be overseen by a balanced group of industry, community and environmental representatives. The end result will go a long way to providing public assurance that the aggregate industry is meeting or exceeding world-class social and environmental management practice.

Aggregate operators that receive SERA certification should enjoy strengthened reputations and less adversarial processes in their site licensing and ongoing operations. Specific sites will carry the SERA certification which includes endorsement by the SERA governing body. Through this process, the public and private buyers of aggregate will be able to make purchasing and procurement decisions that achieve greater environmental sustainability. Local communities should benefit by having aggregate resource developments locate only in appropriate areas and follow standards for environmental and corporate social responsibility.

SERA will put the standards into practicable form by developing measurable/auditable Performance Indicator and Standard Operating Procedure templates as part of the Standards implementation plan.

These standards are based on other resource industry sectors that have recently taken steps to formulate best practice standards. For example, the Forest Stewardship Council and the Marine Stewardship Council now oversee standards that have changed the management of those respective resources, fundamentally and for the better of all concerned. This progress has been accomplished through cooperation between industry operators and groups of stakeholders, including some of the industry's harshest critics. The Socially and Environmentally Responsible Aggregate (SERA) standards proposed here are intended to be similarly transformative.

The concept's genesis stems from exploratory discussions between one of the province's leading aggregate producers and an environmental group that has for decades consistently opposed quarry siting it considers to be inappropriate. In drafting and releasing these standards, it is intended that a broader group of stakeholders will be actively engaged in building support for and, over time, improving the standards. A broader group will also be involved in creating the organization to oversee the further development and implementation of the standards. Both Holcim (Canada) Inc. and Environmental Defence believe that this approach will enable the aggregate industry, environmental community and other stakeholders to better resolve their differences, and to chart a sustainable and responsible path forward for aggregate extraction and use in Ontario. It should be noted that these standards are voluntary and some operators will proceed to obtain certification for some or all of their sites while other sites may well remain uncertified. Nothing presented in this document is meant to imply that a site must comply with these standards if certification is not desired.

Based on extensive research, it is clear that the SERA standards will constitute a best practice for this sector. Widespread adoption of these standards would allow the aggregate industry to operate in a manner consistent with public expectations and better plan for the long-term supply of aggregate. Adoption will also enhance the existing regulatory framework, help secure an invaluable natural legacy for the future residents of Ontario, and enable the public and private buyers of aggregate to make purchasing and procurement decisions that better achieve environmental sustainability.

Approach

In drafting these standards, efforts have been made to ensure that:

- Their scope is consistent with relevant international norms for both generic (ISO) and sector-specific (UK BRE standards, Forest Stewardship Council) Corporate Social Responsibility standards;
- They combine the best elements of both performance-based and management-system based standards;
- They build upon past and ongoing standards development efforts within the aggregate sector; and
- They continue to set a high but achievable bar for what constitutes socially and environmentally responsible aggregate licensing, extraction, operation and rehabilitation.



Standards Wording

These standards have been drafted around the dual concepts of Principles and Core Requirements. The Principles are high-level social or environmental outcomes that provide an overall guiding framework for the standards themselves. Assessment of compliance would not be done at the Principle level but at the Core Requirements level. The Core Requirements describe the range of actions a certification applicant would have taken, or outcomes that it would have achieved, to be deemed to have met the requirements of a particular Principle. Core Requirements may be fleshed out, during the consultation and field test processes, with model performance indicators and means of verification.

The Principles and Core Requirements are intended to be applied in a practical way (appropriate to the scale and intensity of an operation), taking factors into consideration with a view to an objective determination that certified sites are socially and environmentally responsible.

It is intended that both the Principles and Core Requirements apply to applications to site and operate new aggregate operations. Existing operations are also eligible for certification, regardless of their location, subject to the relevant SERA Principles and Core Requirements that bear on compliance, community, First Nations peoples, and environmental and water impacts & site stewardship (as set out in Core Requirement 5a viii, 5b and 5c), resource efficiency and traceability. Operations that have been SERA certified for above the water table extraction at a given site will require a new SERA certification for a (proposed) change in licence to below the water table extraction, subject to the relevant SERA Principles and Core Requirements. Reasonable best efforts will be made to secure public advisory committee, municipal and conservation authority support prior to MNR licence amendment.

The SERA governing body will resolve any disputes using the defined dispute resolution process included in its governance documents.

Proposed Principles

The following seven principles are proposed as a guiding framework for these standards:

Principle 1: Compliance with laws

Aggregate extraction activities (i.e., identification and siting, footprint design, operation and rehabilitation) meet or exceed the requirements of all applicable laws in the jurisdictions in which they occur.

Principle 2: Community consultation and involvement

Public understanding of aggregate extraction activities is achieved by inclusive and transparent stakeholder involvement in all major steps of the resource development, including siting, footprint design, operations and rehabilitation. No one has all of the answers but collaborative efforts can lead to better solutions, better decisions and better outcomes.

Principle 3: Respect for First Nations rights and culture

The legal, customary and asserted rights of First Nations peoples to protect their cultural heritage and to own, use and manage their lands, territories, and resources is recognized and respected.

Principle 4: Benefits to local communities and workers

Aggregate extraction activities maintain or enhance the long-term social and economic well being of local communities and workers.

Principle 5: Environmental and water impacts and site stewardship

Aggregate extraction activities — their identification, siting, footprint design, operation, rehabilitation, and other ecological initiatives — are designed to protect, restore or improve biological diversity and its associated values, water resources, soils, and to protect unique and fragile ecosystems and landscapes, and by so doing, maintain the ecological functions and integrity of the area and its connections to the regional landscape.

Principle 6: Resource efficiency

The efficient use and conservation of aggregates and other resources is achieved by putting them to their highest valued use, maximizing the use of recycled content by looking for alternatives to using high quantities of virgin aggregate and, in the medium to long term, developing optimal transportation networks that factor in both financial and environmental costs.

Principle 7: Traceability

Systems are in place to track aggregate from certified operations through to its end use.



Proposed Core Requirements

The following Core Requirements describe the range of actions a certification applicant would need to have taken, or outcomes that it would need to have achieved, to meet the requirements of a particular Principle.

Principle 1: Compliance with laws

Aggregate extraction activities (i.e., identification and siting, footprint design, operation and rehabilitation) meet or exceed the requirement of all applicable laws in the jurisdictions in which they occur.

CORE REQUIREMENTS

- a) For existing sites, the applicant demonstrates it has obtained the necessary permits to extract aggregate at the operating site seeking SERA certification; including, in instances where the applicant is not the owner of the land, written permission from the land-owner granting the right to extract and operate.
- b) The applicant's licences/permits for the site to be certified, or its application for a new site, specify an annual tonnage limit and a defined period of time and phasing plan, in which extraction operations are allowed to take place (e.g., either the licence/permit itself specifies a time limit for the extraction of the resource or the applicant themselves have adopted a self-imposed time limit). This can include a renewal provision for one, up to a maximum 10-year, extension provided market demand and acceptable community relations justify same.
- c) The applicant, or one or more persons employed or engaged by the applicant, has a proven track record of substantial compliance with or exceeding applicable laws, taken and assessed collectively (see Appendix 1 for a list of applicable legislation).
- d) The applicant publicly states its long-term commitment, on a site by site basis, to adhere to the SERA standards articulated in this document, and as modified and approved from time to time, through its company mission statement or related public documents, signed by the CEO (or equivalent) and posted prominently in the organization.

PRINCIPLE 2

COMMUNITY CONSULTATION AND INVOLVEMENT

Principle 2: Community consultation and involvement

Public understanding of aggregate extraction activities is achieved by inclusive and transparent stakeholder involvement in all major steps of the resource development, including siting, footprint design, operations and rehabilitation. No one has all of the answers but collaborative efforts can lead to better solutions, better decisions and better outcomes.

CORE REQUIREMENTS

- a) The applicant, or one or more persons employed or engaged by the applicant, has a track record of proactively engaging local communities and other stakeholders in matters such as siting, footprint design, operation and closure/rehabilitation of its aggregate extraction sites specifically:
 - i. Establishes (or maintains, if existing) a Public Advisory Committee (PAC) for the duration of the approval process (including pre-consultation) and site operation/rehabilitation (including site plan and licence condition changes/amendments)
 - ii. Demonstrates serious efforts to include a broad and balanced range of interested parties, representative of the community and its interests, in the PAC
 - iii. Ensures the PAC is involved with the development of, and agrees to, the Terms of Reference for its work, and that the PAC has input to government/agency Terms of Reference for technical studies to be completed as part of the siting application and/or operations issues
 - iv. Is equally inclusive and transparent in communications and information exchange with the general public and other community groups, including those who may be opposed to the proposed development
 - v. Involves the PAC in the development of a 'vision' for the life-cycle (including future uses of the site after rehabilitation has been done) of the proposed aggregate site
 - vi. Demonstrates that serious consideration was given to the input received from the PAC and the general public
 - vii. Ensures resources (including company technical reports), commensurate with the scale and intensity of the proposed aggregate site, are available to the PAC, no later than the time they are available to agencies, throughout the pre-consultation and approval process, as well as during site operation and rehabilitation (including site plan and licence condition amendments), to enable the PAC to contribute in a collaborative way throughout the lifecycle of the site.
- b) The applicant ensures that resources, commensurate with the scale and intensity of the proposed aggregate site, are available to the municipal approval body, to enable it to contribute in a collaborative way throughout the pre-consultation process and the lifecycle of the site (including site plan and licence condition changes/amendments)
- c) Applicant has in place a transparent process for addressing the concerns of the local community and other stakeholders



- d) Applicant or one or more persons employed or engaged by the applicant, has a track record of addressing community concerns and of having made reasonable best efforts when they remain unresolved
- e) The applicant has conducted a thorough investigation for the presence of historically or culturally significant archeological values on sites proposed for aggregate extraction and has developed plans to conserve those values with the input of relevant experts and affected communities
- f) Operations must use reasonable best efforts to implement a “good neighbour” philosophy that respects appropriate time of operations (including hauling) such as early mornings and weekends, speed limits and noise levels on haul routes, keeping in context the industrial nature of the business and the nature of the community.

Principle 3: Respect for First Nations rights and culture

The legal, customary and asserted rights of First Nations peoples to own, use and manage their lands, territories, and resources is recognized and respected.

CORE REQUIREMENTS

- a) Meaningful Consultation and Engagement
 - i. The applicant, or those employed or engaged by the applicant, have a good working knowledge of the affected First Nations communities, their legal and customary rights and their interests related to their cultural heritage and the region in which the aggregate extraction operations occur
 - ii. The applicant has taken steps to ensure that affected First Nations communities are reasonably informed of proposed or ongoing aggregate extraction activities including:
 - Notification and consultation with affected First Nations including but not necessarily limited to requirements under the **Aggregate Resources Act and Planning Act**, consistent with the Consultation Protocol list of the Ministry of Aboriginal Affairs
 - Providing information on the nature of proposed activities in a timely and comprehensive manner and in an understandable form and language
 - If requested, helping ensure access to independent technical advice is provided to assist First Nations communities in the collection or interpretation of information and to participate in the process
- b) Capacity Building and Sharing of Economic Benefits
 - i. The applicant is pro-active in providing opportunities, where available, for long-term economic benefits (i.e., employment, training, summer jobs for youth, using aboriginal contractors or services, etc.) to local First Nations communities where they operate

PRINCIPLE 3

RESPECT FOR INDIGENOUS PEOPLE'S RIGHTS AND CULTURE

c) Identification and Conservation of Cultural Values

- i. Before any aggregate extraction activities begin, consultations have taken place with interested and affected First Nations communities to identify any areas of cultural or spiritual significance
- ii. The applicant has a process in place with the First Nation communities that addresses information sharing, protection, mitigation and/or impact benefit agreements, and confidentiality measures for First Nations traditional values and uses for each stage of the aggregate extraction process.
- iii. The applicant supports the efforts, commensurate with the scale and intensity of the operation, of the interested affected First Nations communities to monitor the impacts over time of resource development on the values identified in the First Nations areas of concern.
- iv. Where First Nations communities have indicated that resource development activities on particular sites are creating a threat of serious environmental, economic, or cultural impact, the applicant addresses if and how activities can proceed until disputes are resolved. Examples of serious threats could include:
 - Destruction of or encroachment upon burial sites, spiritual and historic sites, spawning areas, medicinal areas;
 - Demonstrable disruption of livelihood of First Nations people;
 - Damage or loss/reduction to First Nations community water supply; and,
 - Demonstrable disruption of food chain to the First Nations community.

INTERPRETATION NOTE:

The intent of the requirements under Principle 3 is that the applicant engages with the legally recognized governing body for each affected aboriginal community and that not all elements or groups within a community be a party to negotiations. Generally, discussions should be with federally recognized Treaty holding Bands and the closest culturally affiliated Nation to any First Nations cultural heritage site. The requirements in Principle 3 are also not meant to replace or be in violation of any requirements that the applicant may be subject to under the **Aggregate Resources Act, Planning Act, Ontario Heritage Act, Cemeteries Act, Standards and Guidelines for Consultant Archaeologists (2010) or Environmental Assessment Act** with respect to consultation with Aboriginal communities.



Principle 4: Benefits to local communities and workers

Aggregate extraction activities maintain or enhance the long-term social and economic well being of local communities and workers.

CORE REQUIREMENTS

- a) Applicant supports local and affected communities in its hiring and procurement practices (including haul/transportation)
- b) Remuneration, including wages and benefits (such as health and retirement provisions), for workers is comparable in the region and for the industry
- c) According to its means, and commensurate with the scale and intensity of the proposed aggregate operation, the applicant contributes to local and affected communities in a manner that builds capacity and enhances quality of life (for example: sponsorship of events, contributions to causes, incentives for worker involvement in community causes, support for continuing adult education in local and affected communities, scholarships for local colleges/universities, contributions to community infrastructure projects, etc.)
- d) Training is an integral and proactive part of the operation so employees can continually upgrade their skills
- e) The applicant meets or exceeds all applicable laws related to labour (e.g., employment equity, employment standards, etc.) and the health and safety of employees
- f) The applicant, or one or more persons employed or engaged by the applicant, has a good track record with regard to labour and health and safety issues

Principle 5: Environmental and water impacts and site stewardship

Aggregate extraction activities — their identification, siting, footprint design, operation, rehabilitation, and other ecological initiatives — are designed to protect, restore or improve biological diversity and its associated values, water resources, soils, and to protect unique and fragile ecosystems and landscapes, and by so doing, maintain the ecological functions and integrity of the area and its connections to the regional landscape.

CORE REQUIREMENTS:

- a) Environmental Impact Assessment and Monitoring Understanding baseline conditions
 - i. The applicant gathers/assesses data, for such number of years and seasons as is appropriate for the scale and intensity of operation, as part of the approval process and prior to operations, on the full range of expected water resource and environmental impacts such as an assessment of structural and functional changes regarding:
 - Landscape/regional level values sensitive to impacts (i.e., connectivity and fragmentation, hydrogeology, biological diversity, provincially significant features and/or habitat for species at risk)

PRINCIPLE 5

ENVIRONMENTAL AND WATER IMPACTS AND SITE STEWARDSHIP

- Site-level values sensitive to impacts (i.e., water quality and quantity, noise levels, traffic flow and safety, air quality, etc.)

Aggregate operations should be designed to appropriately protect, improve or restore the quantity and quality of sensitive groundwater and sensitive surface water, groundwater recharge, natural stream form and flow characteristics and hydrologic functions. In some instances, changes (e.g., change in hydroperiod that does not negatively impact significant ecological features and functions) can occur that are acceptable in the balanced development of resources as contemplated by the guiding Principles of these Standards.

For extraction below the water table, features such as fractured bedrock, highly heterogeneous permeability, karst features, headwaters, significant recharge areas, and watershed divides, can be more challenging to understand, resulting in greater unpredictability of the impact of extraction, and therefore additional data and analysis may be required to address if and how these conditions should be dealt with in the context of extraction proposals. Aggregate operations in Wellhead Protection Areas, especially in key bacteriological and pathogenic zones, in Intake Protection Zones, and in designated vulnerable areas, particularly in the Greenbelt where lake-based municipal drinking water extensions and expansions are prohibited, warrant similar careful analysis. In addition, some rehabilitative approaches, such as the formation of lakes in excavated areas, can introduce or influence surface water to groundwater interactions (i.e., GUDI) which require attention. These matters should be addressed in the process of understanding and evaluating baseline conditions and site development, mitigation, and rehabilitation plans.

b) Conducting Impact Assessments

- i. The applicant has a credible methodology in place for conducting impact assessments that cover the entire proposed project life, including closure and rehabilitation. The methodology should include financial impact and the impact of management/enforcement mechanisms commensurate with the scale and intensity, and potential for impact, of the proposed aggregate site (i.e., agreements, financial security)
- ii. An assessment of impacts has been completed – appropriate to the scale and intensity of the operation and specific to the uniqueness of the affected features – and the results integrated into management and mitigation systems
- iii. The assessment process considers direct, indirect and cumulative impacts at multiple scales (landscape, regional and site level)
- iv. Environmental impacts are assessed prior to the commencement of any aggregate extraction activities
- v. Source protection plan analysis is recognized to have been conducted at the watershed/regional scale. Implementation of necessary restrictions, if any, on development and site alteration mean aggregate applications are to be evaluated at the sub-watershed and local scale, including at the WHPA impact level, through site specific field studies to be defined by SERA and as described in Appendix 4
- vi. Karst features represent the enhancement of carbonate rock porosity and permeability caused by dissolution due to infiltrating slightly acidic rainwater and surface water infiltration. Appropriate karst identification and mitigation testing protocols/best practices are used
- vii. Where an assessment has indicated that environmental impacts of proposed resource development activities pose significant risk, then:
 - a. Proposed activities do not occur; or
 - a. The applicant reduces the environmental impact to an acceptable level by implementing appropriate (to the scale and intensity of the operation) and proven mitigation measures
- ii. The applicant regularly complies with, and makes publicly available a summary of the results of, assessment, implementation and monitoring activities



c) Avoiding or minimizing environmental impacts

- i. The applicant acknowledges the complexity of factors that may cause environmental impact and is proactive in identifying possible problem areas, before incidents occur, and attempts to identify solutions with regulators and stakeholders
- ii. The applicant has adopted and implemented an ISO certified Environmental Management System (EMS) or series of Standard Operating Procedures (SOPs) to ensure no negative environmental impacts associated with on-site and off-site activities within their control. The EMS and or SOPs will meet or exceed the standards to be established by the SERA governing body. Performance targets will be set consistent with best industry practices with respect to:
 - Air quality – including dust and vehicle emissions
 - GHG emissions – including best practices for reduction of carbon across the applicant’s facilities, in keeping with the Ontario GHG reduction target of 15% below 1990 levels by the year 2020.
 - Noise – including from operations and transportation (e.g., idling, on and off-site transportation routes, etc.)
 - Water – including quantity, quality, and flows
 - Significant wildlife habitat, and habitat for species at risk
 - Other reasonable concerns of local communities/residents (i.e., hours of operation, traffic safety, etc.)
 - Fuel handling and storage, salt handling and storage, snow handling, spills contingency and others related to source water protection
- iii. Workers have received comprehensive training in SOPs
- iv. Monitoring program is in place to proactively determine non-compliance with SOPs
- v. Where there have been instances of non-compliance with the SOPs, best efforts are made to rehabilitate the damaged sites/locations
- vi. The applicant informs regulators and affected parties as soon as practicable of significant incidents, associated risks and the steps taken to remedy their impacts
- vii. The applicant periodically issues public site condition reports

PRINCIPLE 5

ENVIRONMENTAL AND WATER IMPACTS AND SITE STEWARDSHIP

d) Conserving Natural Heritage

i. **“No Go”, “Maybe” and “Go Carefully” Areas**

The applicant cannot apply for SERA certification of new operations in “No Go” areas, and will comply/has complied with the criteria for extraction in the “Maybe” and “Go Carefully” areas as outlined in the chart below.

For the purposes of the chart below, the areas described (e.g., NEP, ORM etc.) are as they exist effective the date the applicant applies for SERA certification, or receives SERA certification, whichever is the more restrictive of the two.

This chart should be read in concert with the definitions in the Glossary at the end of this document.

NO GO	MAYBE****	GO CAREFULLY
Natural Heritage System “Core”	Natural Heritage System “Linkage”	Other Lands
<ol style="list-style-type: none"> 1. NEP (EN and EP) 2. ORM (Natural Core) 3. New Operations in the Greenbelt Protected Countryside NHS 4. Provincially Significant Wetlands (PSW’s) 5. ANSIs** (excluding Earth Science ANSIs designated as a result of the underlying geology and related resource uncovered by aggregate operations) 6. Specialty Cropland 7. Significant Woodlands, as defined in this document 8. Areas defined in Source Protection Plans as WHPA-A or IPZ-1 9. Significant Wildlife Habitat in NHS Core areas 10. Habitat of Endangered and Threatened species except in accordance with provincial and federal requirements. 	<ol style="list-style-type: none"> 1. Greenbelt Protected Countryside outside of NHS 2. NEP Rural (Plan amendment) 3. ORM Natural Linkage and Countryside 4. Existing operations in Greenbelt Protected Countryside NHS*** 5. Key hydrologic features 6. Significant Valleylands 7. Sandbarrens, alvars, savannahs, and tall grass prairies 8. Habitat of rare and special concern species 9. Fish habitat in accordance with provincial and federal requirements. 10. Areas defined in Source Protection Plans as WHPA-B/E/F or IPZ-2, WHPA-C (in Greenbelt) and designated vulnerable areas subject to study requirements to be defined 11. Significant Wildlife Habitat in NHS Linkage areas, subject to defined removal and replacement approach described in this document 	<ol style="list-style-type: none"> 1. Agricultural Land 2. Hedgerows 3. Old Fields 4. Non-PSW* 5. Non-significant Woodlands 6. Areas defined in Source Protection Plans as WHPA- C (outside Greenbelt)/WHPA-D, or outside WHPAs or IPZs 7. Any other lands not covered by “No Go” and “Maybe”

* Wetland evaluation is completed by the applicant in accordance with standard wetland evaluation criteria. Such evaluation is shared with appropriate agencies and the public for information and next steps.

** Excluding Earth Science ANSIs designated as a result of the underlying geology and related resource uncovered by aggregate operations. Protection of the representative geological or geomorphological attributes for which the interest was identified will be accomplished using an earth science heritage evaluation.

*** Existing operations are permitted, as well as expansions of existing mineral aggregate operations, as per section 4.3.2.3(c) and (d) of Greenbelt Plan.

**** Subject to net gain provisions of the SERA governing body as outlined in Appendix 2.



ii. **Buffers**

Ecologically appropriate buffers, supported by a peer-reviewed process managed by the SERA governing body, are applied to natural heritage features identified as no-go zones in order to conserve and maintain the value being protected

iii. **Net Gain Provisions**

“Maybe” and “Go Carefully” zones are eligible for certification provided that the applicant has demonstrated that:

- Water resource systems shall be protected, improved or restored to minimize potential negative impacts. Planning will be done on the watershed scale and necessary restrictions will be evaluated and implemented related to (proposed) operations and site alterations on the local scale
- Connectivity between key natural heritage features and key hydrologic features will be maintained, or enhanced, before, during and after extraction
- Any significant habitat on the site that cannot be protected during aggregate extraction activities will be offset through protection or restrictions on development or enhancement of an area adjacent to the site or in the same eco-region that is of greater ecological value (a larger area of similar ecological value or equivalent sized area with higher ecological values) (see Glossary and Appendix 2 for a table of expected net-gain ratios for different ecological values impacted by aggregate operations)
- In an area of “linkage” within a municipally designated Natural Heritage System or Greenlands, or similarly designated or functioning area with significant natural features and functions close to designated population centres, to the fullest extent practicable, these offsets will maintain, replace or enhance the ecological features, functions and linkages being lost on-site e.g. wildlife corridor, forest connection, etc.

iv. **“Peer-Review” Provisions**

“Maybe” zones may be eligible for certification provided that the net gain provisions above have been peer-reviewed by professionals with significant experience in the following areas: hydrogeology, hydrology and conservation biology/ecology, and using a process managed by the SERA governing body.

PRINCIPLE 5

ENVIRONMENTAL AND WATER IMPACTS AND SITE STEWARDSHIP

e) Rehabilitation

- i. Progressive and final rehabilitation will be done expeditiously. Creation of the final rehabilitated landform shall generally be done within two years following final operations (except lake filling and other water dependent features), consistent with the provisions for rehabilitation below
- ii. The disturbed area of a site will be rehabilitated to a state of reasonably acceptable ecological value as defined by SERA
- iii. The use of a Land Conservation Act "Conservation Easement" and progressive land use re-designation e.g. Protected Countryside NHS, NEP "Natural" and/or "Protection", Natural Heritage System ("NHS") etc. will be pursued to ensure that long-term ecological integrity will be maintained or restored and improved for end-of-quarry-life land use
- iv. Lands disturbed or occupied by aggregate operations are rehabilitated with the goal of returning the land to a meaningful agricultural, ecological, or naturally sustaining vegetated, or other appropriate and approved land use and to improving the biodiversity of the area
- v. The applicant has developed rehabilitation and after use plans, after having provided affected stakeholders and community an opportunity to provide input, prior to commencing operations
- vi. The applicant, its assignees or successors, makes the necessary provisions/financial security, commensurate with the scale and intensity and potential for impact of the proposed aggregate site, to cover, in perpetuity, the full costs, liabilities and governance requirements of rehabilitation, especially atypical rehabilitation (i.e., ongoing water management infrastructure) and any monitoring or treatment that may be required after final cessation of operation. These provisions/financial security shall be in a form that can be reviewed and/or audited by the local community. Alternatively, the applicant can deposit the necessary funds into a rehabilitation trust account, with oversight provided by the SERA governing body
- vii. The applicant can demonstrate that its accounting for the full costs of rehabilitation and monitoring are consistent with Generally Accepted Accounting Principles (GAAP) or any successor principles



Principle 6: Resource efficiency

The efficient use and conservation of aggregates and other resources is achieved by putting them to their highest valued use, maximizing the use of recycled content by looking for alternatives to using high quantities of virgin aggregate and, in the medium to long term, developing optimal transportation networks that factor in both financial and environmental costs.

CORE REQUIREMENTS

- a) Applicant or one or more persons employed or engaged by the applicant has a track record of promoting the efficient use of both the resources (energy, water, etc.) consumed in its operations and aggregates and has set specific targets, consistent with industry best practices, and is monitoring progress towards its own:
 - use of renewable materials (including energy) over non-renewable materials
 - resource efficiency – using fewer raw materials
 - re-use of materials
 - use of recycled materials (including recycled aggregate materials and concrete)
 - maximizing the use of existing sites
 - optimizing transportation network efficiency
- b) The applicant has identified any regulatory and policy challenges to the implementation of this Principle. Two examples of such challenges are: unnecessarily restrictive recycled aggregate content building code specifications, at regional authority and municipal levels, for concrete infrastructure projects; and a lack of adequate infrastructure to support financially viable, rail or water transport as alternatives to the current trucking system. The applicant works to educate government and stakeholders and to suggest solutions for addressing such challenges with a goal to overcoming the challenges.

INTERPRETATION NOTE:

It is understood that an operator may not always be able to set hard numerical targets for the efficient use of resources for all aspects of its operations and that in some circumstances, continuous improvement targets may be all that can be set. Parties involved in developing these draft standards stress provincial action is needed to increase the recycled content of aggregate based building materials.

Principle 7: Traceability

Systems are in place to track aggregate from certified operations through to its end use

CORE REQUIREMENTS

- a) The applicant has put in place systems to enable monitoring and certifying organizations to trace aggregate products from their origin to their delivery to the final customer and end-use, a process known as “chain of custody”

Governance and Implementation

The governance and implementation recommendations set out below are intended to be in place for the first 18 months of SERA's existence as a not-for-profit organization and shall be subject to the decisions of the interim and long-term governing body. The recommendations are intended to ensure that implementation of the SERA standard is both cost effective and credible.

Moving forward, the process used to further develop and finalize the SERA approach for implementation will generally follow the ISEAL Alliance's Code of Good Practice for Setting Social and Environmental Standards (these are summarized in Appendix 3). The intent is that the SERA governing body will evolve over its first eighteen months to meet the ISEAL standard. The ISEAL Alliance is a global association for social and environmental standards whose members include the Forest Stewardship Council, Marine Stewardship Council and Fair Trade. This will require engaging a broader group of stakeholders and establishing a fair and transparent development and implementation process.

Governance

- The implementation of these standards will require oversight by a larger and more diverse group of interests. An independent SERA governance body should be established that is credible, transparent and legitimate, consistent with best practices on CSR standards governance.
- The governing body should:
 - Be overseen by an independent group of people representing a balance of social, environmental and industry interests
 - Have in place an Executive Director to develop and implement strategies
 - Be financially resourced to appropriately carry out its mandate

Certifiers

- Make use of existing 3rd party certifiers and their auditing systems
- The certifying team should consist of a biologist/ecologist, a hydrologist/hydrogeologist (depending on the circumstances) and an expert on local stakeholder consultation
- Certifiers should have proven experience in dealing with the technical aspects of the SERA Standard including but not limited to: ecology, hydrology/hydrogeology, ecological and hydrological/hydrogeological function, impact and mitigation assessment, community engagement and standard operating procedures within the aggregate industry.



Scope of assessments

- A company's actual aggregate extraction sites should be the recipients of certification rather than the company itself.
- Despite the above, given the nature of the standards themselves, the certification process should have an audit focus that includes both the company's management systems and policies as well as the on-the-ground operations at the aggregate sites that are being certified.
- In cases where the company does not own the land on which their aggregate operation is located, for the sake of simplicity it is recommended that the operator seek certification for the site (as opposed to the landowner).

Eco-label

- SERA should give thought to the use of some sort of eco-label that could be used by companies upon successful certification, including green dye to assist the consumer. Any eco-labeling should comply with all applicable laws and regulations. Given that on-product use of an eco-label (i.e., on the aggregate) would be challenging, it is recommended that eco-labeling be used in conjunction with off-product claims (e.g., promotional material, site signage, etc.) and on-product claims on the end-use product (e.g., signage on a building built with certified aggregate).
- Rules should be adopted for the use of on and off-product claims and label use. All SERA certified operators should comply with these rules.
- The certifier should address the issue of %-based claims (i.e., does level of certified aggregate used in a project have to be 100% in order to be able to use the eco-label and to make on and off product claims)
- Guidance should be provided to address the issue of off-product/site claims and consider what operators would be allowed to say in general about their overall operations. This is particularly an issue if a company only has a small % of their operations certified to the standard

Chain of custody

- To facilitate the use of on and off-product eco-label use and claims, it will be critical to have in place a procedure for tracking 'chain of custody' of the aggregate from the site through to its final end use. As many certifiers have developed rigorous yet flexible approaches to this challenge, this procedure should be developed with their direct input

Performance evaluation

- The certifier should address the issue of ‘scoring’ and the minimum bar that must be reached in order for an aggregate operation to be deemed to be certified.
- As with many other 3rd party certification systems, it is recommended that certifiers will not require full compliance with all the requirements of the standards before certification is granted, but rather that some threshold of compliance with the requirements under each Principle be achieved and then time-bound undertakings be issued and completed. Respecting the “No Go” areas is an absolute standard with no allowance for part performance.
- The SERA governing body should determine which core requirements in the standards are fundamental to responsible aggregate extraction such that an operator’s failure to meet them would prevent certification or result in decertification.
- Attempts by the applicant to circumvent the spirit underlying the Standards should be taken into consideration by the certifier.
- Length of certificate and re-auditing intervals
- Certifications should be granted upon completion of a successful audit and have a fixed duration period. The fixed period should be determined such that certificate cycles are relevant to the length of time that aggregate facilities are operated.
- Annual audits should be performed to confirm ongoing compliance with the Standard; to investigate disputes/complaints; and assess the operator’s compliance with any undertakings.
- Instances of non-compliance that may arise out of the annual audit may result in requirement for undertaking or revocation of certification. The SERA governing body should consider those circumstances in which a certification may be revoked.
- A final ‘decommissioning’ audit will likely be needed; however, for efficiency’s sake these could be timed to align with the initial assessments of new aggregate operations that the company is seeking certification of.
- The SERA governing body should consider those circumstances in which Third Party appeals or intervention in a certification application should be considered, along with the process and transparency for same.



Appendix 1: List of relevant legislation

In Ontario, the aggregate industry operates in a highly regulated setting subject to a complex provincial, federal and municipal legislative and policy framework. MNR is the lead Ministry but works in coordination with MMAH, MOE, MTO, and MEI. Municipalities exert some control through official planning and zoning to implement the provincial policies/plan at the local level. Quasi-judicial bodies such as the OMB adjudicate disputes.

List of Key Applicable legislation and policy instruments¹:

PROVINCIAL LEGISLATION	PROVINCIAL POLICY AND PLANS	FEDERAL LEGISLATION
<ul style="list-style-type: none"> • Primary: Aggregate Resources Act (ARA) • Conservation Authorities Act • Crown Forest Sustainability Act • Endangered Species Act • Environmental Bill of Rights • Environmental Protection Act • Forest Fire Prevention Act • Greenbelt Act • Lakes and Improvement Act • Mining Act • Municipal Act • Niagara Escarpment Planning and Development Act • Oak Ridges Moraine Conservation Act • Occupational Health and Safety Act • Ontario Water Resources Act • Clean Water Act • Planning Act • Public Transportation and Highway Improvement Act 	<ul style="list-style-type: none"> • Provincial Policy Statement (PPS) • Greenbelt Plan • Growth Plan for the Greater Golden Horseshoe (Places to Grow) • Niagara Escarpment Plan • Oak Ridges Moraine Conservation Plan • ARA Provincial Standards 	<ul style="list-style-type: none"> • Fisheries Act • Migratory Birds Convention Act • Species at Risk Act

¹ Compiled from MNR website; Between Rock and a Hard Place, CUI 2009; OSSGA website, FORCE website

APPENDIX 2

TABLE OF EXPECTED NET-GAIN RATIOS FOR DIFFERENT ECOLOGICAL VALUES IMPACTED BY AGGREGATE OPERATIONS

Appendix 2: Table of expected net-gain ratios for different ecological values impacted by aggregate operations

These net-gain ratios do not apply to “No Go” zones.

These ratios apply to like for like features.

Goals and Objectives

The main goals and objectives of offset ecological restoration are to:

- Create replacement features, functions and linkages on-site or in a functionally adjacent area, except where greater benefit is achieved by selecting more distant locations within the same ecological region;
- Replace with the same feature types except where replacement with another type would provide greater benefit while ensuring that “net gain” benefits are not realized years or decades into the future; and with respect to habitat, improve overall habitat, create new habitat of importance to the species (e.g., JESA breeding ponds), conduct research to improve knowledge of the species, and implement conservation easements for long term habitat protection.
- Base the ecological design on a site-by-site basis, considering functional losses, landscape setting, quality, unique values, and land values.

FEATURES	REPLACED RATIOS (REPLACED : REMOVED)	
	Within Greenbelt (incl. NEP / ORMCP)	Outside Greenbelt
Key hydrologic features	3:1	1.5:1
Significant valleylands	3:1	1.5:1
Sandbarrens, alvars, savannahs, and tall grass prairies	3:1	1.5:1
Habitat of rare and special concern species	3:1	1.5:1
Fish habitat in accordance with provincial and federal requirements	3:1	1.5:1
Significant Wildlife Habitat subject to defined removal and replacement approach described in this document	3:1	1.5:1

Appendix 3: ISEAL Alliance Code of Good Practice for Standard-Setting

- The ISEAL Standard-Setting Code sets the rules for legitimate and effective standard-setting processes, thereby increasing the credibility of the resulting standard. It applies to all standards that promote improvement in social and environmental practices.

Credible Standard-Setting Processes

The Code focuses on the standards development process and on the structure and content of the standard. Key steps in standards development include:

- Defining the objectives of the standard and justifying the need for its development
- Identifying affected stakeholders and providing them with information about the Code development process and how they can participate
- Having public consultations and ensuring that there is a balance of interests participating
- Providing a variety of opportunities and tools (i.e., teleconferences, meetings, webinars) for stakeholders to participate
- Ensuring a variety of opinions are given equal weight and providing for balanced decision-making
- Making the standard and supporting documents publicly available and reviewing the standard on a regular basis

Requirements on the structure and content of the standard include:

- Having clearly defined objectives and ensuring that the requirements in the standard contribute directly to achieving those objectives
- Ensuring the content of the standard is clear and unambiguous, and that it is relevant to the market and builds on regulatory requirements
- Balancing the need to adapt the standard so that it is locally applicable with the desire for global consistency in its interpretation
- Working to harmonize standards where their content or scope overlap

Appendix 4: Source Water

Source water protection in Ontario refers to the protection of the quantity and quality of water for use as current and future municipal water supply. The protection of source water through socially and environmentally responsible aggregate extraction is an important goal for all Ontarians as it directly relates to our health and economic well being. The precautionary principle is acknowledged as a key element of effectively dealing with source water issues.

As described in *Pembina Institute for Appropriate Development v. Canada (Attorney General, 2008)* at paragraphs 31-32: The precautionary principle is that "... environmental measures must anticipate, prevent, and attack the causes of environmental [source water in this circumstance] degradation. Where there are threats of serious irreversible damage, lack of full scientific certainty should not be used as a reason for postponing measures to prevent environmental degradation." The uncertainty and risk considerations related to source water protection can be addressed through the use of technically sound scientific study and adaptive management "...adaptive management permits projects with uncertain, yet potentially adverse environmental impacts to proceed based on flexible management strategies capable of adjusting to new information..."

Accordingly,

- SERA will define a framework for local field studies necessary to thoroughly evaluate potential excavation in the WHPA/IPZ zones and designated vulnerable areas identified in the "Maybe" areas.
- These studies will be undertaken taking into consideration of the difficulty in modeling and inherent uncertainty in predicting outcomes in below the water table extraction features such as fractured bedrock, highly heterogeneous permeability, karst features, headwaters, significant recharge areas, highly vulnerable aquifers, and watershed divides.
- Local field study requirements will vary based on the location of the aggregate application relative to the sensitivity of the source water protection area and its proximity to a municipal drinking water supply well, surface water intake, significant recharge area, and/or highly vulnerable aquifer.
- The local field studies will be conducted in accordance with best industry practices
- Studies and mitigation plans submitted for the site demonstrate that the proposed aggregate operation will not negatively impact the quantity and/or quality of municipal drinking water supplies and designated vulnerable areas.
- AMPs will be implemented as necessary to address remaining uncertainty and risk and ensure source water conditions are protected. It is also acknowledged that aggregate operations should be designed and operated to protect private water supplies from potential effects of the aggregate operations with proactive measures to address any related water supply impacts or complaints.



Glossary

Acronyms

AMP	Adaptive Management Plan
ANSI	Life Science Area of Natural and Scientific Interest
EMS	Environmental Management System
ESA	Endangered Species Act
FSC	Forestry Stewardship Council
GAAP	Generally Accepted Accounting Principles
GHG	Greenhouse Gas
Go Carefully Zone	Area where aggregate extraction operations will be permitted for certification provided that net gain provisions have been met
GUDI	groundwater under the direct influence of surface water
IPZ	Intake Protection Zone
JESA	Jefferson Salamander
Maybe Zone	Area where aggregate extraction operations will be considered for certification provided that the applicant has met certain criteria, including net gain provisions
MNR	Ontario Ministry of Natural Resources
MOE	Ontario Ministry of Environment
NEP	Niagara Escarpment Plan
	EN – Environment Natural
	EP – Environment Protection
NGO	Non-Governmental Organization
NHS	Natural Heritage System (Core and Linkage)
No Go Zone	Area “set aside” for protection. Siting of aggregate extraction operations will not be permitted and these sites cannot be certified
OMB	Ontario Municipal Board
ORM	Oak Ridges Moraine
PAC	Public Advisory Committee
PSW	Provincially Significant Wetland
SERA	Socially and Environmentally Responsible Aggregates (the Standards and the Governing Body)
SOP	Standard Operating Procedure
WHPA	Wellhead Protection Area

Adaptive Management Plans

An AMP accompanies a complete and scientifically sound aggregate licence application. The AMP is a systematic approach to engineering design, implementation, and monitoring as well as to related policy choices that recognizes risk, uncertainty, and variability in the natural environment. An AMP puts in place the mechanisms to ensure that the success of the intended protection of the natural environment, as well as private and municipal drinking water supplies, is understood, and appropriate adjustments to an implemented proven mitigation system can be made, if necessary.

Application of an AMP requires specific performance targets along with procedural and system checks and balances. Comprehensive monitoring tracks actual behaviour and establishes whether targets are being met. If targets are not met, monitoring provides information to help explain why not, and ensures that appropriate response actions are undertaken. Response actions are defined for routine and contingency scenarios. Conditions are established up to and including cessation of operations should successful implementation not be achieved. There must be at least one “oversight” authority for the implementation of the AMP by the operator. Typically, the AMP would be expected to be a condition of licence for the operation and may have other appropriate approval authorities, as well.

Aggregate extraction activities

The identification, siting, design, operation and rehabilitation of a stone, sand or gravel site.

Applicant

Applicant for certification of an existing or proposed aggregate site and operation under this Standard.

Avoidance, Mitigation and Compensation Measures

Avoidance, Mitigation and Compensation is the attempt to offset potential adverse effects of human activity on the environment. Several off-set options exist:

- a) Avoiding adverse impacts by not taking an action.
- b) Minimizing impacts by limiting the degree of action.
- c) Rectifying by repairing, rehabilitating, or restoring the affected environment.
- d) Reducing or eliminating impacts over time through operational design, active engineering (mitigation) measures, preservation and maintenance activities.
- e) Compensating for an impact by replacing or providing substitute resources or environments. In most mitigation agreements, more of a resource or habitat, and in particular, its ecological function(s), must be provided than was originally present. Provision can be in the form of planned rehabilitation and/or off-site enhancements. Spatial and component ratios, as appropriate, greater than 1:1 are required in part to compensate for unrealized losses and the inability of technology to completely restore the natural environment. Other spatial and temporal considerations are also paramount i.e. proponents cannot extend all of the creation of habitats, woodlands, or “net gain” benefits (as defined in the Glossary and Appendix 2) out for years or decades or vast distances away from the affected site.

Except for the avoidance option, most mitigation efforts assume that some loss or change of natural heritage and water resources is permissible. Mitigation is to be proven before extraction begins; this may occur in a phased or staged approach.



Proven Mitigative Measures

Proven mitigative measures focus on offset options c) and d) above. A certain level of professional and technical expertise is assumed in the design and implementation of the mitigative measures.

Proven measures shall be defined as:

- Ones that have been implemented in the field, on site or explicitly linked to the specific hydrogeologic and ecologic setting (via another site with directly comparable conditions and similar mitigative purpose), at a relevant demonstrative, spatial and temporal scale, with unambiguous observational data that clearly and conclusively demonstrates system performance that meets pre-defined system objectives.
- In some circumstances, the demonstration of proven measures may also be through specific examples and may draw from broader examples of standard/proven engineering solutions (e.g., we know pumps work, we know settling ponds work, we know discharge works, etc.). Such circumstances may occur when the same experienced operator (or person engaged by the operator) plans to apply standard science/engineering techniques used at one operation in a new way or setting to achieve environmental protection or benefits at another site. Another example is when the same experienced operator (or person engaged by the operator) plans to use measures that have been demonstrated to perform successfully at another of their own sites. In the latter situation, measures that are to be relied upon as primary mitigation measures (as opposed to contingency measures that are not anticipated to be necessary), that are not in widespread use (e.g., hydraulic control buttresses) should be demonstrated on site prior to extraction that may result in a negative impact without their use.

To the extent there remains uncertainty at the time of approval, checks (eg, staged ARA approvals (1 – 5 years), etc.) can/should be put into place to ensure the implementation is successful and a cessation of operations is required should successful implementation, following approval, not be achieved.

Measures, monitoring, reporting and compliance matters are to be resolved via regulatory approvals.

If and when long-term management and monitoring systems are required, such systems are to be accompanied by commensurate financial sureties.

Chain of Custody

The process used to maintain and document the chronological history of the unbroken path a product takes to the consumer, including all stages of manufacturing and distribution.

Financial Security

Financial security shall be in the form of Letters of Credit, endowment or trust funds or such other form of security so as to ensure that the responsible regulatory body can operate the aggregate site and/or manage any required mitigation systems in the event that the operator fails to comply with its commitments, such that there is no financial burden on the public.

Financial security for rehabilitation of aggregate sites shall be in the form of accrual on the corporate balance sheet using Generally Accepted Accounting Principles. Alternatively, financial security can take the form of a deposit into a rehabilitation trust account, with oversight provided by the SERA governing body.

Key Hydrologic Features

Key hydrologic features include:

- Permanent and intermittent streams and rivers
- Lakes (including kettle lakes)
- Seepage areas and springs
- Wetlands and vernal pools

Natural Heritage System

A “natural heritage system” is a system made up of natural heritage features and areas linked by natural corridors necessary to maintain biological and geological diversity, natural functions, viable populations of indigenous species, and ecosystems. These systems can include lands that have been restored and areas with the potential to be restored to a natural state. In making its determinations, SERA will refer to the boundaries of provincial, regional and local Natural Heritage Systems and will accept and work with the expert-based evidence of NHS Core and Linkage functions inside and outside of designated NHS and similarly designated and functioning areas with significant natural features and functions that are close to dense population centres.



NATURAL HERITAGE SYSTEM CORE

The natural heritage system's core represents its most sensitive or significant natural features and functions.

For the purposes of this document NHS Core includes:

- NEP (EN and EP)
- ORM (Natural Core)
- Greenbelt Protected Countryside within NHS
- PSW
- ANSI
- Significant Woodlands
- WHPA-A and IPZ-1
- Significant Wildlife Habitat
- Habitat of Endangered and Threatened Species. If this habitat is addressed in accordance with provincial and federal requirements, the Core Area definition shall not prohibit extraction and certification.

The purpose of these core areas is to maintain and, where possible, improve or restore the ecological integrity of an ecosystem by:

- a) Protecting and, where possible, improving or restoring, the health, diversity, size, and connectivity of key natural heritage features, hydrologically sensitive features and the related ecological functions;
- b) Protecting or restoring natural self-sustaining vegetation and wildlife habitat, particularly significant wildlife habitats and significant woodlands;
- c) Maintaining the quantity and quality of groundwater and surface water, particularly Provincially Significant Wetlands;
- d) Maintaining groundwater recharge;
- e) Maintaining natural stream form and flow characteristics; and
- f) Protecting significant landform features.

NATURAL HERITAGE SYSTEM LINKAGE

The natural heritage system linkage represents those features and functions that connect core areas to, or within, local, regional and provincial scale natural heritage systems. For the purposes of this document, NHS Linkage includes:

- NEP Rural
- Greenbelt Protected Countryside outside NHS and existing operations in NHS as per section 4.3.2(c) and (d) of Greenbelt Plan
- ORM (Natural Linkage and Countryside)
- Key hydrologic features
- Significant valleylands
- Sandbarrens, alvars, savannahs, and tall grass prairies
- Habitat of rare and special concern species
- Fish habitat in accordance with provincial and federal requirements
- WHPA – B/E/F, WHPA – C inside of Greenbelt, IPZ-2 and designated vulnerable areas
- Significant Wildlife Habitat subject to defined removal and replacement approach described in this document

The purpose of these linkage areas is to maintain, and where possible improve or restore regional-scale open space linkages along agricultural lands, cultural meadows, early successional woodland, hedgerows, parklands, recreational areas, hazard lands, infrastructure corridors, lower quality river valleys and stream corridors by:

- a) Maintaining, and where possible improving or restoring, the health, diversity, size, and connectivity of key heritage features, hydrologically sensitive features and the related ecological functions;
- b) Maintaining, and where possible improving or restoring natural self-sustaining vegetation over large parts of the area to facilitate movement of plants and animals;
- c) Maintaining a natural continuous e.g. north-south or east-west, connections and additional connections to river valleys and streams or forested areas

Net gain

“Net gain” is broadly defined as a net environmental benefit – based on the values of environmental indicators. In an ecological context, the word “net” refers to the value of the ecological benefits associated with a new change (activity or development) less the development’s associated ecological losses. For the purposes of these standards, net gain is above and beyond responsible and timely rehabilitation and will be implemented on a case-by-case basis in accordance with the provisions established by the SERA governing body. Full realization of “net gain” is spatially, component, and temporally sensitive and cannot extend out years or decades, or at distances outside of the eco-region.



No Negative Impact

In regard to natural heritage features and areas or ecological functions for which an area is identified, no degradation that threatens the health and integrity of the natural features, due to single, multiple or successive development or site alteration activities.

The Natural Heritage Reference Manual should be consulted for further understanding.

Peer-Review Process

Peer — Someone of equal standing with another, belonging to the same professional group or having the same professional status

Peer review is a generic term for a process of review of work by others or a process of evaluation involving qualified individuals within the relevant field in order to ensure the work meets a specified criteria.

Performance Indicator

A performance indicator is the evidence that an auditor would look for in determining if the requirements of the standards have been met.

Public Advisory Committee (PAC)

A committee with a diversity of interests that represents the public's views during consultation on, footprint design and planning for a proposed aggregate extraction site, as well as ongoing operations and rehabilitation.

SERA Governing Body

SERA will be an independent not-for-profit organization governed by representatives from community, the aggregate industry, environmental and non-governmental NGOs. Space in the governance of SERA for First Nations community involvement has been provided should they wish to be engaged. The SERA Governing Body will work to finalize development of the Standards, establish a voluntary certification system in order to promote more responsible aggregate extraction and implement the certification system in accordance with the objects of incorporation and governing by-laws.

Significant Wildlife Habitat

WILDLIFE HABITAT means areas where plants, animals and other organisms live and find adequate amounts of food, water, shelter, and space needed to sustain their populations. Specific wildlife habitats of concern may include areas where species concentrate at a vulnerable point in their annual or life cycle and particular areas which are important to migratory or non-migratory species (PPS 2005).

SIGNIFICANT means, in regard to wildlife habitat, ecologically important in terms of features, functions, representation or amount, and contributing to the quality and diversity of an identifiable geographic area or natural heritage system (PPS 2005). This excludes habitat of Endangered and Threatened Species as it is dealt with under separate policy (NHRM page 83).

SIGNIFICANT WILDLIFE HABITAT DISCUSSION

Significant Wildlife Habitat is listed as one of the components of the natural heritage policies contained in the Provincial Policy Statement (PPS, section 2.3.1). In general, section 2.3 of the PPS requires that “natural heritage features and areas will be protected from incompatible development” and that development and site alteration will be permitted on or adjacent to these areas “if it can be demonstrated that there will be no negative impact on the natural heritage features or ecological functions for which the area is identified.”

The assessment of impacts from proposed aggregate operations should take into account the ecological system that sustains individual species populations (i.e., species live and interact with other species, abiotic factors and ecological functions), proposed off-site habitat enhancements (replacement areas) and progressive and final site rehabilitation.

Identification of Significant Wildlife Habitat should follow the methods described in the Significant Wildlife Habitat Technical Guide.

REMOVAL AND REPLACEMENT APPROACH

SIGNIFICANT WILDLIFE HABITAT REMOVED to permit aggregate extraction should be replaced in a manner that demonstrates the following:

- An area of wildlife habitat is created that is of a 3: 1 replacement ratio within the Greenbelt and 1.5: 1 outside Greenbelt, measured against the area of wildlife habitat removed;
- Wildlife habitat replacement is substantially achieved in advance of Significant Wildlife Habitat removal. During aggregate extraction, Significant Wildlife Habitat replacement proceeds in a progressive and phased way, in order to replicate, in large measure, the ecological features, functions and linkages of the area to be removed;
- The Significant Wildlife Habitat removal and replacement plan is peer reviewed and approved at certification as per the net gain provisions of this Standard. The habitat removal and aggregate extraction on it occurs when habitat replacement is substantially achieved to the satisfaction of the certifier.
- Wildlife habitat is established to achieve the maximum ecological benefits feasible for a given site; and
- Best management practices should be employed when undertaking the removal and replacement work.



Significant Woodlands

Woodlands are defined by the Provincial Policy Statement (PPS 2005) as:

“...treed areas that provide environmental and economic benefits to both the private landowner and the general public, such as erosion prevention, hydrological and nutrient cycling, provision of clean air and long-term storage of carbon, provision of wildlife habitat, outdoor recreation opportunities, and the sustainable harvest of woodland products. Woodlands include treed areas, woodlots or forested areas and vary in their level of significance at the local, regional and provincial levels.”

“Significant” means:

“... in regard to woodlands, an area which is ecologically important in terms of features such as species composition, age of trees and stand history; functionally important due to its contribution to the broader landscape because of its location, size or due to the amount of forest cover in the planning area; or economically important due to site quality, species composition, or past management history” (PPS 2005).

TREED AREAS THAT ARE NOT SIGNIFICANT WOODLANDS

The following types of treed areas should not be evaluated by the significant woodland criteria:

- Plantations managed for the production of Christmas trees;
- Plantations managed for the production of nuts, fruits, or nursery stock;
- Plantations primarily managed for tree products rotation of < 20 years;
- Plantations primarily managed for the production of wood fibre as outlined in a Forest Management Plan that has been reviewed by the MNR;
- Woodlands which are substantially dominated by invasive non-native tree species such as buckthorn (*Rhamnus* sp.) or Norway maple (*Acer platanoides*); and
- Woodlands that do not have a minimum width of 40 m.

AREAS OF SIGNIFICANT WOODLANDS THAT CAN BE CONSIDERED FOR AGGREGATE EXTRACTION PROVIDED THAT APPROPRIATE REPLACEMENT IS ACHIEVED THROUGH OFF-SITE ENHANCEMENTS AND SITE REHABILITATION DESCRIBED IN THE REMOVAL AND REPLACEMENT APPROACH:

- Other plantations of low ecological diversity as demonstrated by a lack of native trees in the canopy or sub-canopy and/or native trees as regenerating saplings or seedlings and/or native shrubs and/or native herb species;
- Early successional woodland/forest habitats (previously non-wooded, currently regenerating areas), and with trees aged 20 years or less;
- Other cultural woodlands;
- Less than 20% * of large significant woodlands (40 ha and larger) on the applicant's land holdings, one-time, provided that an equivalent existing significant woodland area is permanently retained on the applicants land, (and includes a Forest Management Plan focused on natural heritage values and management to occur during active phases of extraction) in addition to the removal and replacement ratios described below; and,
- Woodland that extends as a finger or lobe less than 200 metres wide and less than 250 metres long, which extend from a square, rectangular, oval or round block of woodland. Any woodland removal should not divide one woodland into two.

* This indicative level will be further examined for ecological justification and operational practicality on the ground as the Standard is field-tested and key performance indicators developed. Refinement (lowering) of the removal percentage may be warranted based on this work.

REMOVAL AND REPLACEMENT APPROACH

Significant Woodlands removed to permit aggregate extraction should be replaced in a manner that demonstrates:

- An area of **woodland** is created that is of a 3:1 replacement ratio within the Greenbelt and 11/2:1 outside Greenbelt, measured against the area of significant **woodland** removed; and
- **Significant woodland** replacement is substantially started in advance of **Significant Woodland** removal. Replacement proceeds in a progressive and phased way, as aggregate extraction phasing proceeds, in order to replicate, in large measure, the ecological features, functions and linkages of the area to be removed; and
- **Woodland** is established to achieve the maximum ecological benefits feasible; and
- The Significant woodlands removal and replacement plan is peer reviewed and approved at certification as per the net gain provisions of this Standard. Peer review and certification will confirm proposed area for removal does not conflict with other elements of the No Go table and will evaluate factors such as change in status of woodland (i.e., no longer meeting criteria for significant woodland), interior woodland/habitat, proximity to watercourses, connectivity and linkage functions, sufficiency of forest cover in regional context. In cases, where the applicant has very large woodlands (hundreds of hectares or more), a maximum total allowable cut may be warranted. The woodlands removal and aggregate extraction occurs when replacement is substantially started to the satisfaction of the certifier.



Best management practices should be employed when undertaking the removal and replacement work. For example:

- **Woodland** restoration is monitored and adaptive management is used to ensure success, including where necessary watering, replacement of failed plantings, removal of exotics, etc.;
- **Woodland** soil is salvaged where available and transferred in a timely manner to restoration areas;
- **Woodland** understory plants are salvaged where feasible and transferred in a timely manner to suitable restoration areas; and
- **Woodland** restoration may include enhancement plantings following initial plantings to increase native biodiversity and to restore native shade tolerant trees, shrubs and herbs.

Track Record

The applicant or persons employed or engaged by the applicant can demonstrate acceptable performance against set standards. Performance shall be defined as:

- That of the company at the site, other sites owned or managed by the company;
- Processes initiated and implemented by the company at the site, other sites owned or managed by the company; or
- The direct work of an employee or consultant, including work by employees or consultants done prior to being engaged by the company.

When evaluating track record, the certifier may have regard to the track record of affiliated companies.

An applicant with an unacceptable track record, including unacceptable records of affiliated companies, cannot overcome the said unacceptable record by drawing on the provisions of this paragraph.



SERA

Socially and Environmentally
Responsible Aggregate

