

**Westbank First Nation and Canadian Aggregates Inc. Joint Venture  
Westside Road North Aggregate Pit – Crown Lease Application**

**Draft Management Plan**

This short report accompanies the Application for Crown Land to establish a gravel pit off Westside Road 27km north of Kelowna.

Westbank First Nation and Canadian Aggregates Inc. identified this aggregate resource through independent initiative and have invested significant time and financial resources in investigating this aggregate source over the past five years.

This Crown Lease application is based on the findings of the work conducted under BC Government Investigative Use Permit dated June 10, 2009 and the future need for high quality development aggregates in the Okanagan Region.

A coordination meeting was held with a wide range of government representatives at the Central Okanagan Regional District offices in Kelowna on October 22, 2009. At this meeting, the majority of representatives confirmed that they would receive and consider an application for this gravel operation.

## **SECTION A – PROJECT OVERVIEW**

The general location of the gravel pit position is shown on **Figure 1**. It is located on Crown Land.

Canadian Aggregates Inc. holds the mineral tenure rights for landbase indicated on **Figure 2**. Although exploration could have been more widespread, the proponents limited their initial work outside of, and to the south of the Fintry Protected Area.

The Westbank First Nation (WFN) has a finite land base from which it can derive lease income. Based on the fact that this gravel pit is located in WFN Traditional Territory and Crown Land, the First Nation has claimed traditional ownership of resources in this area. Apart from supporting the local regional economy, this gravel pit operation will allow the WFN to become more economically sustainable in the longer term.

**Figure 3** shows the location of test pit holes dug as part of the Investigative Permit work. The location of the neighbouring Ministry of Transportation and Infrastructure (MOTI) gravel reserve is shown as well.

**Figure 4** shows the proposed layout of the operation, which is subdivided into three types of aggregates that will be extracted. Only a small portion of each pit area will be excavated at one time, with the disturbed area reaching approximately 5 hectares for each pit over a period of 50 or more years of operation. Stockpile areas will be required, including internal vehicle movement routes. These area needs, together with the requirement to include the old Forest Service Road in this application, will require the larger Crown Lease Tenure area being requested.

Unfortunately, it is very difficult to predict exactly what aggregate materials will be found where underground, as well as what aggregate mixes the market in the Kelowna area will be calling for once the pit comes into operation later in 2010. Matching these issues may require that small gravel pits be opened in other areas within the lease parcel to ensure that economic development is adequately supported with the resource that is required at the time. Having provided this caveat, it is unlikely that more than 10 to 15 hectares of disturbance will be created at any one time.

The locations of the pits have been chosen to extract the aggregates adjacent and in the deep esker or depression that exists in the middle of the site. This lower elevation and the existing tree cover will all allow for the pits to be aesthetically hidden from viewscapes. This will also allow a dampening of operation sounds (**Figures 5 and 6**).

The operation is intended to include the collection, crushing and screening of aggregate materials from the pit. No washing of aggregates is envisaged. At this stage, production will be in the region of 249,000 metric tons per annum. The lifespan of the existing pit area is expected to exceed 50 years, being established in small increments, with the rehabilitation of areas where aggregate extraction has ceased.

Road access will be off Westside Road North via the old forestry road as shown on Figure 4. Some work may be required to improve this passability and the intersection with the Westside Road.

Only 4 to 6 gravel trucks will be required to move the limited quantities of aggregate and could generate up to 40 trips per day on Westside Road. This relatively low traffic volume does not trigger a MOTI traffic study. According to MOTI Officials this volume is well within the existing capacity of Westside Road. Due to public perception of the narrowness of the road, especially at the bluff sections, it may be necessary for the public and the proponents to lobby senior Government to assist in widening the road over these sections.

Access to the pit areas will be off the existing forestry roads. Topsoil will be cleared utilizing a bulldozer. This topsoil will be moved into carefully positioned berms. This material will be used in the remediation of the cut areas as per the guidelines and requirements of the Ministry of Energy, Mines and Petroleum Resources (i.e. shaping of area, covering with topsoil, replanting with commercial tree seedlings, etc.).

Extraction will commence at one or more of the three pits.

An excavator or front-end loader will extract material from the pit and will feed it directly onto the sorting screens. Larger aggregate materials will be fed into a crusher. Although allowance has been made for an aggregate washing plant (and closed circuit three pond water treatment and reuse facility), it is unlikely that washing will be required. Aggregates from the Okanagan are known for being relatively clean.

The limited water use for dust control and facilities at the gravel pit will either be sourced from a well or tankered in from offsite.

Areas near to each pit will be cleared for the stockpiling of pitrun, sand, and the various gradations of stone sizes.

From a scheduling point of view, the intent is to receive the Crown Lease as soon as possible in 2010. It will take approximately 3 to 4 months to establish the first gravel pit before gravel sales will take effect in earnest.

The Kelowna region has a dearth of good quality aggregate materials. These materials have been found by the proponents at the position shown in this application. The expansion of the local economy in future is expected to create huge demands for these natural resources. The Westbank First Nation would like to participate in this business opportunity.

## **SECTION B – PROJECT DESCRIPTION**

### **1. Description of Works**

Site visits, investigative test pits, initial abrasion testing and aggregate grading (by the Proponent and Trow Associates) have been completed. AC Eagle Ltd. has obtained detailed aerial photography and contours. A Site Plan has been generated from this data (Figure 4). This indicates dimensions of the three active pits, the cleared areas that would eventually be required around the active pits, and stockpile locations.

An overview of the gravel operation process has been provided in Section A above. Stockpiles of aggregate product will be formed. Road trucks will be loaded and weighed on site for haulage of the product to the end users. The Joint Venture Partners are planning a production rate of less than 249,000 metric tons per annum depending on market requirements.

Construction, asphalt, concrete aggregates will be the three main product types. Although a large proportion of the gravel sizes can be graded by simple screening (and no washing), larger aggregate sizes will be crushed before screening.

Height of the working face will depend on the final design work. At this stage, it seems that a typical pit face could be as high as 20m (sloped). Wherever possible this slope will be below ground level and/or hidden by existing tree cover, so minimizing the aesthetic impacts.

It is expected that the water supply for basic operations (i.e. aggregate washing operations not expected) will be from groundwater wells or trucked in. Wastewater treatment will be by properly researched and rudimentary washrooms will serve the limited number of staff on site.

The level of excavation/processing required to produce 249,000 tonnes per annum will be limited. Only one or two people will be required to operate the site on an intermittent basis.

If aggregate washing is required in future, a closed system of three ponds will be utilized for settling, filtering and reuse in the operation.

Stormwater and erosion controls will be conducted according to recognized professional requirements and Government guidelines.

As mentioned above, only small portions of the pits will be opened up at a time. As time progresses, between 5 and 15 hectares will be opened up for production at any one time. As benches are cut and are mined out, they will be rehabilitated with topsoil and replanted with commercial tree seedlings.

No asphalt batch plant will be located here. Only aggregate material will be produced at this location.

## **2. Road Access**

A permit may be required from the Ministry of Transport and Infrastructure (MOTI) to upgrade the existing Forestry Road access to Westside Road.

Upgrades to the existing access road will be made. This road falls within the Crown lease application area being requested as well as existing road rights of way previously granted to forestry companies.

The first section of road to the main part of the proposed lease is 572 m long and fits within an existing 15m ROW (Figure 3). Some minor earth work will be required to upgrade the intersection with Westside Road. Design work will take place once a Crown Lease has been granted.

The second portion of roadway that makes up the eastern and southern boundaries of the gravel pit lease up to the intersection with the central pit access road in the southwest of the property is 1,150 m long.

Of the 38 ha of land being requested, the main roadway makes up 1.2 ha (7m road width).

The whole section of roadway up to this intersection will be broadened in places to make the road more passable. Dust suppressant will be applied and stormwater culverts will be added where required.

## **3. Present State of Land**

The land base is Crown Land. The 2000 Okanagan Land and Resource Management Plan (LRMP), which included extensive public involvement, reserved areas for environmental and human needs. The intent of the LRMP was to allow economic and other public land uses on Crown Land that fell outside of the LRMP reserved areas.

The land under consideration for this gravel pit has formerly been used for selective forestry purposes. A forestry road winds its way around the proposed disturbed area in the shape of a horseshoe. Adjacent land use (around 1.5km north east and on the shores of the Lake) is summer recreational, with a limited number of permanent residents.

The Fintry Protection Area, which is linked to the Fintry Provincial Park, is located in portions to the north of the property in question.

Tree cover and its location higher up the mountain will hide production and the relatively small size of the operation will not provide serious noise problems for the nearest neighbours who are

located 0.5 to 1 km away from the pit. Topsoil berms will be specially located to shield the pits from a visual and sound perspective. Pits will be located below ground level as much as possible.

Non-perennial watercourses exist to the north and south of the proposed disturbed area. A normal buffer of 30m will be allowed along the entire pit/stream interface, preferably including a berm of sorts and erosion ponds.

Depth of water table is currently unknown. Due to the gravelly nature of the geological strata here, it's more than likely that the water table will be very deep.

No Agricultural Land Reserve areas occur in the vicinity. Private forest tenures exist in the area.

The old forestry road has a right of way that is not leased to anyone at present. This ROW has been included in this Crown Lease application from where it meets the Westside Road up into the various pits. This roadway will be controlled and access will be provided to the MOTI for access to their pit reserve.

#### **4. Reclamation of the Gravel Pits in the Long-term**

As mentioned above, reclamation of the mined out sites will be conducted. This will include: regrading of the land; adequate stormwater control; topsoil replacement; and replanting of tree seedlings.

### **SECTION C – ADDITIONAL INFORMATION**

The call for information is limited at application stage to a draft management plan level. After submission to the various authorities for review and approvals, a formal management plan will be issued as part of the legal tenure document. That final plan will help guide the development of the gravel pit operation.

In the interim, the following information is provided to decision-makers.

#### **1. Environmental**

**Land impacts:** Limited logging, clearing and grubbing will be required to open up the various pits. Topsoil will be pushed into carefully aligned berms. A small temporary administration building and weigh scale, as well as a maintenance/storage yard will be created (see Figure 4).

The area has tree cover, which will help hide the gravel pit activities from immediate aesthetic impacts.

Apart from forestry activities, it seems that no other activity has been pursued on this land. Clarity regarding archaeological and cultural values will be obtained via the Westbank First Nation. Archaeological monitoring was conducted during the test pit work. No remnants were discovered.

Winter forage range for deer and other animals could be an issue of concern. An environmental overview assessment will be conducted by a Registered Environmental Professional. This work will also address the occurrence of endangered fauna and flora.

The Proponent will also work with the Ministry of Environment's Park representatives to manage off road ATV and other vehicles in the immediate vicinity of the gravel pit.

The old forestry road will be upgraded and a suppressant placed on it to limit dust.

**Atmospheric Impacts:** The gravel pit is surrounded by forest that, together with topsoil berms and the downward trend of extraction, will help dampen sounds of the operation. As far as possible, normal working weeks should be maintained, which will limit impacts on recreational utilization of the nearby resort and lake. Dust generated by the aggregate crushers will be limited by the use of water suppression techniques.

**Aquatic Impacts:** The gravel extraction operation will be remote to any watercourse. Special stormwater and snowmelt runoff control mechanisms (e.g. cutoff ditches/berms, settling ponds, filtering systems, etc.) will be employed to totally control the ingress of unwanted materials into aquatic environments further afield. These will be designed once the crown Lease has been granted. Gas or fuel spillage from the bulldozer, excavator/front-end loader and trucks will be strictly controlled. Emergency spillage procedures will be put in place to counter the impact of such events.

**Fish and Wildlife Habitat Impacts:** In a similar fashion, it is fully intended that there be no impacts to fish habitat. The small scale of the operation will have a minimal impact on wildlife. It has been requested that wildlife corridors be maintained to allow deer and other animals to move through the area.

## **2. Socio-Community**

**Land use:** The Kelowna area is growing rapidly. Accessible supplies of construction aggregates are limited. This gravel pit provides the opportunity to utilize local resources for the benefit of the local economy and the Westbank First Nation.

Although there will be a limited impact on the local recreational areas (e.g. haulage traffic on Westside Road), the small scale of operation will result in a minimal impact.

Initial opening of the pit (e.g. use of bulldozer, frontend loader, crusher and screening plant) to create stockpiles will be reasonably intensive. Future day-to-day maintenance of the gravel pit and stockpiles will be much less intensive.

Existing tree cover, relative remoteness of the pit and reasonable operating hours will help minimize these impacts.

When compared to other gravel pits, this operation will be relatively small (Figure 5). Operations will be conducted during the normal working day, and loading of trucks will only take place when required. Haulage traffic will only be increased slightly as this route along Westside Road is already used to convey materials to the Kelowna area.

The Proponents are willing to work with local residents to time truck traffic so as to avoid peak hours (i.e. school bus times, and certain times over weekends during summer).

**Socio-Community Conditions:** Other than increased truck traffic (limited), no other significant impacts.

**Public Health:** Very limited waste disposal is expected from this operation (probably one or two operators on site at any one time).

**First Nations:** The application area falls within the jurisdiction of the Westbank First Nation. Being a joint applicant in this case, this First Nation will co-ordinate internally with regards to the review of this project.