



**Okanagan-Kootenay Sterile Insect Release Program
Presentations to Participating Regional Districts
Spring, 2018**

REQUEST FOR RESOLUTION

THE PROGRAM

The Okanagan-Kootenay Sterile Insect Release (SIR) Program is an area-wide, integrated pest management program that was established in 1989 to reduce the use of pesticides in local communities, and to protect the pome fruit industry of the Okanagan, Shuswap and Similkameen Valleys from infestations of codling moth. The Program today operates as an inter-regional service with four participating Regional Districts: the Regional Districts of Okanagan-Similkameen, Central Okanagan, North Okanagan and Columbia Shuswap.

The SIR Program has attracted considerable attention at home and abroad for its innovative and successful approach to pest management. Since its inception, the Program has enabled growers to reduce the volume of pesticides used to control codling moth infestation by 96%. Wild codling moth populations have dropped by 94% across the Program's service area; damage from the moth at time of harvest has been reduced to 0.2% of fruit in more than 90% of all commercial orchards. Tourism, food security and relations between residents and orchardists have all benefitted from the SIR's sustainable approach to pest management, as has BC's international reputation as a centre of excellence in horticultural research and innovation.

The Program's success can be attributed, in large part, to the support and involvement of the participating Regional Districts and the tree fruit

industry. Success is also a function of the Program's legislative framework which assigns responsibility for operations to an autonomous SIR Board, and which gives the Board key powers, including those related to budget approval and regulation. A lack of flexibility in the legislation, however, makes it difficult for the Program to respond to new challenges and opportunities.¹

CHALLENGES AND OPPORTUNITIES

For the past 18 months, the SIR Board has worked to identify and explore options aimed at overcoming certain difficulties facing the Program. These difficulties relate, most importantly, to the Program's inability to:

- protect the region from new, emerging invasive pests using methods other than sterile insect technology (SIT)
- access funding to assist with technical advancement and to pursue opportunities for collaboration
- incur liabilities by entering into multi-year supply agreements with interested parties outside of the Program's service area, for the purpose of generating revenues to help offset program costs

Based on considerable research, including consultations with the provincial government and legal counsel, the Board has confirmed that legislative change at the provincial level will

¹ The rigidity of the legislation is a reflection of the Program's original goal of moth eradication.

ultimately be needed to modernize the scope of invasive pests managed by the Program, and the range of control methods available for use. Research has also been conducted to determine how to qualify for and access funding to assist with technical advancement and to pursue opportunities for collaboration. These efforts are ongoing.

The Board has determined that the SIR Program does not require legislative change to sell product for the purpose of raising program revenues. If the Program wishes to enter into multi-year sales contracts, however, the Board does require authorization from the participating Regional Districts. Authorization is required, specifically, to allow the SIR to incur liabilities that are common to every multi-year supply agreement.

Authorization may be provided through a simple resolution that:

- supports the efforts of the SIR Board to sell excess product, on behalf of the Regional Districts, for the purpose of offsetting program costs
- authorizes the SIR Board to incur liabilities that would be incurred as a result of entering into supply contracts²

SALE OF EXCESS PRODUCT

The SIR rearing facility in Osoyoos produces nearly 400 million live sterilized adult moths every year, plus many egg sheets that contain codling moth eggs. This annual output represents the amount of product that is needed to service all of the affected areas within the four participating Regional Districts.

The annual output also represents a little over half of the rearing facility's production capacity. With its existing technology and equipment, the facility

today is capable of producing many more sterile adult moths than are required to meet the needs of the Program's service area. The difference between the total production capacity of the existing facility, and the current annual output required to service the four Regional Districts, is referred to as the "excess product".

The production process at the rearing facility is capital intensive in nature. It is designed to produce large numbers of live sterile moths and egg sheets, and to achieve significant economies of scale. As the level of production at the facility increases, so too does the total cost of production. The *per unit* cost of production, however, falls as total output rises. The cost to produce each successive egg sheet and adult sterile codling moth at the facility continues to fall until the total capacity of the facility has been reached.

The SIR Board proposes to utilize some of the facility's unused capacity to produce additional egg sheets and sterile codling moths for sale to other markets. The Board does not propose to increase the overall capacity of the facility through new capital investments in the building or equipment. Additional production would be undertaken within the current structure as it stands today, using the equipment that is in place. The additional production would capture the inherent economies of scale, and would result in excess product for the Board to sell to interested buyers in other markets. Net revenues earned from all sales would be returned to the Program to offset the increasing cost to service growers and communities in the four Regional Districts.

DEMAND FOR PRODUCTS

The SIR Program is "the longest-running, most successful, area-wide program for control of codling moth in the world".³ Governments, grower industry associations, researchers and others in many jurisdictions recognize the SIR's strengths,

not be incurring — and is not asking for authorization to incur — financial liabilities related to borrowing.

³ *Report of an External Review*, Joint Food and Agricultural Organization / International Atomic Energy Association Division, 2014.

² Each long-term contract would represent a commitment by the SIR Board to provide a set amount of sterile moth products to a buyer. Each commitment would become a liability — that is, an undertaking that the Board would accept responsibility for fulfilling. The SIR Board would

and have connected with Program staff to learn more about the SIR's approach and use of sterile insect release. In recent years, the Program has exported small batches of sterile moths to the USA, South Africa, and New Zealand for use in integrated pest management pilot programs and research. The Program's General Manager, in a business development capacity, has presented at many national and international symposia and meetings on the experiences and success in the Program's service area. The Program has been honoured with an international award of excellence in integrated pest management.

For many years, the Program has sold small numbers of sterilized moths to researchers at universities, and at institutions such as Agriculture and AgriFood Canada, on an "as available" basis. As well, the Program already sells egg sheets that exist as a by-product of moth production. To date, egg sheet sales have been modest in scale, sold on a week-to-week basis to a commercial biocontrol manufacturer in Eastern Canada. Net revenues from these sales reached \$200,000 in 2017.

The Board's current inability to enter into multi-year supply contracts — more specifically, to incur liabilities that are inherent in such contracts — prevents the Program from selling excess live sterile moths and additional egg sheets, on a contractual basis, to interested buyers. Sales contracts would give these buyers the security of supply that they need to make investments in their own services, and to meet their obligations to end-users. The contracts would, in turn, enable the Program to generate and to plan for additional non-tax revenues to benefit growers and communities in the Okanagan, Shuswap and Similkameen Valleys.

The potential amount of net earnings from future sales is not insignificant. Program staff estimate that the \$200,000 in net revenues from egg sheet sales in 2017 could reach \$400,000 annually by 2021. Net revenues from the sale of live sterilized adult moths could generate similar amounts each year, based on the production capacity of the existing facility.

MANAGING RISK

Every agency that enters into a contract for the sale of products to another body faces a certain amount of risk. The SIR Program is no exception to this rule. Contracts for the sale of live sterilized adult moths or egg sheets to buyers in other jurisdictions would expose the Program to a range of risks, including:

- the collapse of a colony of moths that occurred as a result of *force majeure*, a virus, or some other production issue, and that left the Program unable to fulfill shipments
- delays in transport of products across borders because of errors in obtaining permits, or refusals by foreign jurisdictions to recognize permits
- inability on the part of the Program to collect payments owing to it from buyers

It needs to be recognized, however, that risk is an inherent part of any operation that involves the mass production of insects. Indeed, the SIR today assumes many risks in the work it undertakes to meet the needs of growers and communities in the four participating Regional Districts. What is important is how the Program manages risks that would be assumed as a result of its entry into long-term sales agreements. SIR Program staff, under the guidance of the Board, have consulted legal counsel, senior staff from the Municipal Insurance Association of British Columbia, and representatives of the SIR's own commercial insurance broker to fully understand the risks involved, and to develop an effective risk management approach. These consultations have highlighted the need for two layers of protection:

- contracts, with strong terms and conditions
- commercial insurance

Multi-Year Supply Contracts

Multi-year supply contracts prepared by SIR would be structured to significantly mitigate — and in some instances eliminate — much of the risk that the Program would face. Contracts would be written to include:

- a strong and explicit refusal of liability for failure to supply as a result of problems with the production process and/or catastrophic events, including colony collapse
- general indemnification terms to protect the Program, its Directors and its staff against all claims, expenses, fees, fines, judgements and liabilities that arise from the product or its use
- a clause that explicitly transfers all risk related to the transport of a product from the facility, and storage of the product before its use
- a clause that makes the buyer responsible for meeting all legal and regulatory requirements surrounding the importation of the product to, and use of the product in, the end jurisdiction

Each contract with a buyer would constitute a purchase order, which would be signed pursuant to the parties entering into a broader supply agreement. The supply agreement would contain additional safeguards related to the obligations of each party, minimum and maximum order quantities, costs and agreement-termination provisions.

A suggested master supply agreement and accompanying contract has been drafted by SIR's legal counsel and shared with the insurers.

Commercial Insurance

Supply agreements and contracts would eliminate or mitigate much of the risk to the Program from its efforts to sell excess product. Commercial insurance would provide an important second layer of protection.

The current insurance policy is under review to confirm that scope and amount of coverage would be adequate to address the Program's needs on a go-forward basis. If required, adjustments to the existing policy could be made, and/or additional policies obtained.

REQUESTED RESOLUTION

The SIR Board believes that the sale of excess product to buyers in other jurisdictions is a natural "next step" in the evolution of the Program. The

Board is confident that strong opportunities to sell egg sheets and live sterile moths exist. The Board is confident, as well, that these opportunities can be pursued in measured ways that protect the Program and the participating Regional Districts from risk and that generate additional net revenues for the Program. All net revenues earned from sales would be used to offset the cost to provide the Program across the service area.

The SIR Program seeks the support of the Regional District partners to sell excess product, and seeks their authorization to incur liabilities that would arise from a decision to enter into multi-year supply agreements. Authorization by the Regional Districts can be provided through the resolution provided in Figure 1.

Figure 1
Requested Resolution

THAT the Regional District Board support the efforts of the OKSIR Board to sell product that is developed at the OKSIR Rearing Facility, within the total production capacity of the Facility as it exists today, that is not required to control codling moth populations within the OKSIR Program service area;

THAT the revenues from the sales of product be used to offset the cost to provide the OKSIR Program; and

THAT the Regional District Board recognize the potential of the OKSIR Board to incur liabilities by entering into multi-year sale-of-product contracts, and authorize the OKSIR Board to incur any such liabilities.