

UBCM COMMUNITY EXCELLENCE AWARDS

2008 APPLICATION

NAME OF LOCAL GOVERNMENT: Regional District Okanagan-Similkameen

PROJECT OR PROGRAM TITLE: GIS to Support West Nile Virus Program

SELECT YOUR CATEGORY: (CHOOSE ONE ONLY)


- BEST PRACTICES
- BEST PRACTICES, WEBSITE
- BEST PRACTICES, ANNUAL REPORTING
- LEADERSHIP & INNOVATION, SMALL COMMUNITY
- LEADERSHIP & INNOVATION, MID-SIZE COMMUNITY
- LEADERSHIP & INNOVATION, LARGE COMMUNITY
- LEADERSHIP & INNOVATION, REGIONAL DISTRICT
- PARTNERSHIPS: LOCAL GOVERNMENT & FIRST NATIONS PARTNERSHIPS

CONTACT PERSON: Tim Bouwmeester

CONTACT TITLE: Information Services Manager EMAIL: tbouwmeester@rdos.bc.ca

PHONE: 250-490-4127 FAX: 250-492-0063

BY MAKING THIS APPLICATION, I UNDERSTAND THAT ALL MATERIALS WILL BE KEPT BY UBCM AND ARE AVAILABLE FOR VIEWING BY OTHERS THROUGH THE UBCM COMMUNITY EXCELLENCE AWARDS LIBRARY.

SIGNATURE:  NAME (PRINT): Tim Bouwmeester DATE: July 21, 2008

APPLICATION CHECKLIST:

Remember to send 8 copies of your entire application package for distribution to the Selection Committee. **EACH copy should contain:**

- | | |
|--|--|
| <input checked="" type="checkbox"/> A completed application form | IF APPLYING TO ANNUAL REPORTING: |
| <input checked="" type="checkbox"/> A one-paragraph summary of the project/program being submitted | <input type="checkbox"/> A copy of the Annual Report |
| <input checked="" type="checkbox"/> A five-page summary report (max. 5 pgs) | IF APPLYING TO PARTNERSHIPS: |
| <input checked="" type="checkbox"/> A letter from the Mayor supporting the application | <input type="checkbox"/> A copy of the partner contact info list |

In addition to the eight complete application packages, please include:

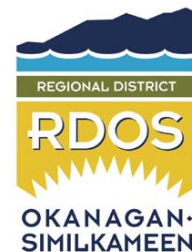
- One CD/electronic copy of the entire submission

GIS to Support West Nile Virus Program

2008 Community Excellence Awards
Leadership and Innovation –
Regional District

Regional District Okanagan-Similkameen

July 2008



**2008 UBCM Community Excellence Awards
Leadership and Innovation – Regional District**

Executive Summary

West Nile virus (WNV) is a serious disease that has caused sickness and in some cases death in people throughout much of Canada and the United States. Interior Health and the Center for Disease Control (CDC) have predicted that one of the most likely areas for the WNV to enter BC is through the Okanagan valley along the Washington State border. The Regional District Okanagan-Similkameen (RDOS) is using Geographic Information Systems (GIS) to take a 2-phased approach in monitoring and preparing for when the WNV arrives in our jurisdiction. The first phase involves monitoring mosquito populations. Field staff record site locations, site conditions and information regarding any treatments that are applied in a custom built GIS application on a tablet PC. This information is summarized using a GIS model and forwarded to the CDC to help monitor the current conditions and minimize the potential for an outbreak. The second phase will be implemented in the event of a WNV outbreak. The RDOS uses GIS to model where adulticide treatments should occur, which areas will be impacted and how to minimize the impact on sensitive ecosystems, rare and endangered species, organic farms, and beekeepers. The RDOS worked closely with CDC, Interior Health and the Ministry of Environment to create this emergency plan. To our knowledge, the RDOS is the first jurisdiction in BC to create an Emergency Plan for WNV with this level of detail. The RDOS has used regional and inter-regional economies of scale for the program and is a leader in its delivery and administration.

**2008 UBCM Community Excellence Awards
Leadership and Innovation – Regional District**

West Nile virus (WNV) is a mosquito borne virus that has caused serious sickness in people throughout much of Canada and the United States. Interior Health and the Center for Disease Control (CDC) have predicted that one of the most likely areas for the WNV to enter BC is through the Okanagan valley along the Washington State border. The Regional District Okanagan-Similkameen (RDOS) is an excellent leader in developing and implementing a state-of-the-art system to monitor and control populations of mosquito species that carry WNV and also in creating West Nile Emergency Response Plan.

Using a Tablet PC and GIS Application to Monitor the Current Mosquito Situation

Since the spring of 2005 the RDOS has worked closely with the CDC to determine what information is required to monitor the current mosquito situation and when to use control measures to minimize the potential for WNV to enter the south Okanagan. Staff at the RDOS created a GIS application that enables field staff to quickly and easily enter information into a tablet PC regarding a multitude of factors related to WNV including;

- Site location
- Site condition (presence or absence of standing water)
- Approximate size of the mosquito population
- Species of mosquitoes (some species are more likely carriers of the WNV than other species)
- If, when and what control measures were taken

At the end of the day the field staff returns to the office where the information is downloaded and summarized into a central database with all of the location and sample information for that year. This database will later be forwarded to CDC for their records. Information will also be used in reports to summarize what species of mosquito have been found and what control measures have been completed each year. This will also assist in determining potential risk for subsequent years.



Field Staff Sampling for Mosquito Larvae



Applying Biological Larvicide

Regional District Okanagan-Similkameen GIS to Support West Nile Virus Program



Entering Field Information into Tablet

Detailed View of Input Screen

West Nile Habitat Areas

Habitat 1 Habitat 2 Habitat 3

ID: OKF-02 New Habitat: YES

Date (d/m/y): 7/ 9/2008

General Location: Sunvalley Way & Oliver Ranch

Technician: Source: natural

Status: Size (sqm): 0

Habitat Type: Other Treatment Applied:

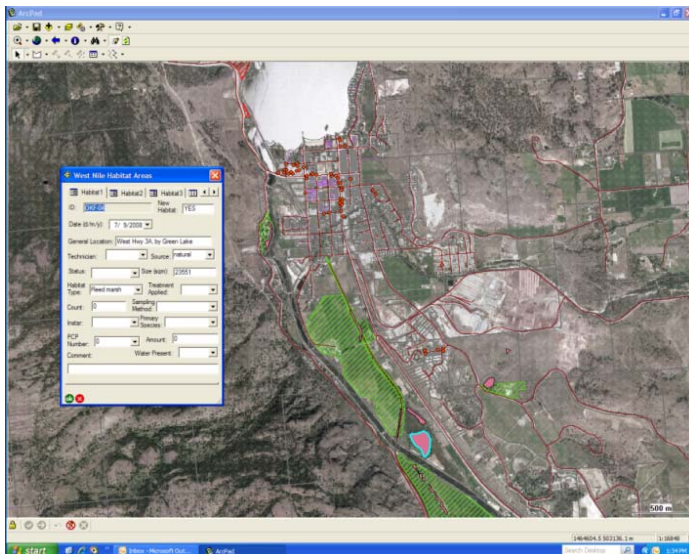
Count: 0 Sampling Method:

Instar: Primary Species:

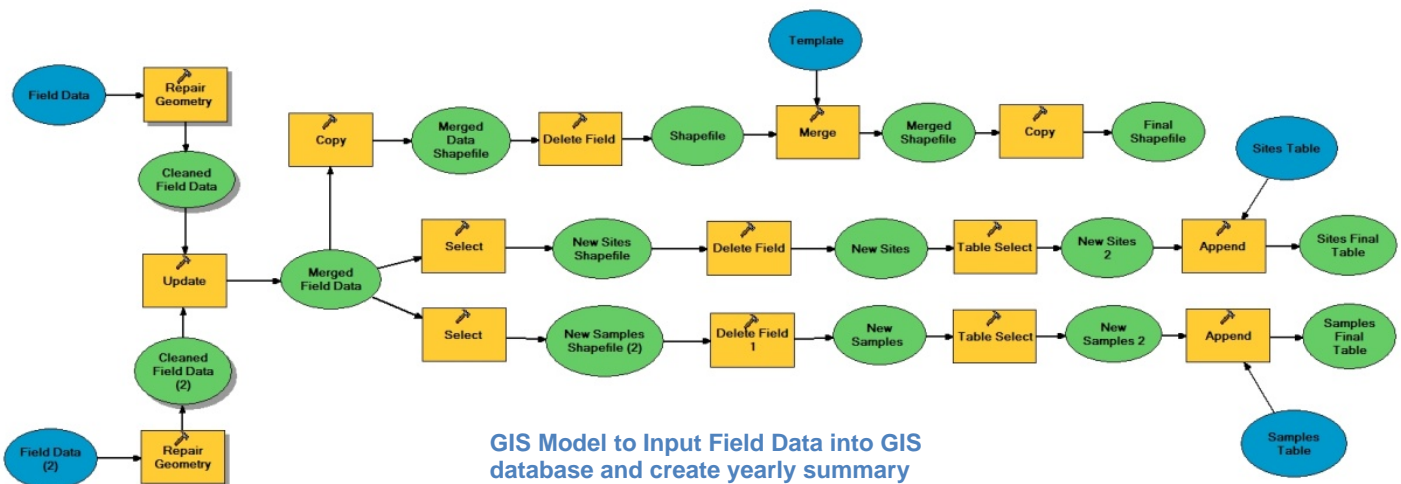
PCP Number: 0 Amount: 0

Comment: Water Present:

ok



Map and Input Screen on Tablet PC
Used by Field Staff



GIS Model to Input Field Data into GIS
database and create yearly summary
table in a format required by CDC.

Emergency Plan for WNV

In the event that WNV does become established in the south Okanagan and an adulticide program is carried out, it is important to know where the control operation should occur, particularly which areas will and will not be covered. An adulticide program would entail an aerial or ground spray application of a broad-spectrum insecticide (in most cases malathion). This has the potential to significantly impact ecologically sensitive areas, organic farms and beekeeping operations. The south Okanagan and Similkameen valleys are home to many red and blue listed endangered species. An adulticide program could directly kill many of these susceptible species particularly if they are insects. An adulticide program could also indirectly affect these animals by negatively impacting their food supply and/or habitat. The south Okanagan and Similkameen valleys also have one of the highest concentrations of certified organic farms in Canada. An application of this nature could jeopardize their certified organic status. Beekeeping is also an important industry in this area both in terms of pollination and honey production. An adulticide program over a bee yard could potentially kill many of the bees in the apiary as well as the mosquitoes. It is critical from an environmental and economic standpoint that all of these aspects are considered before an adulticide program commences and to minimize these impacts where possible.

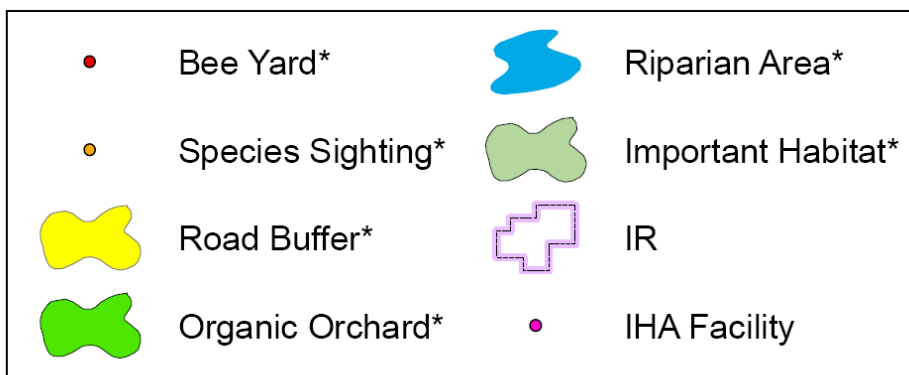
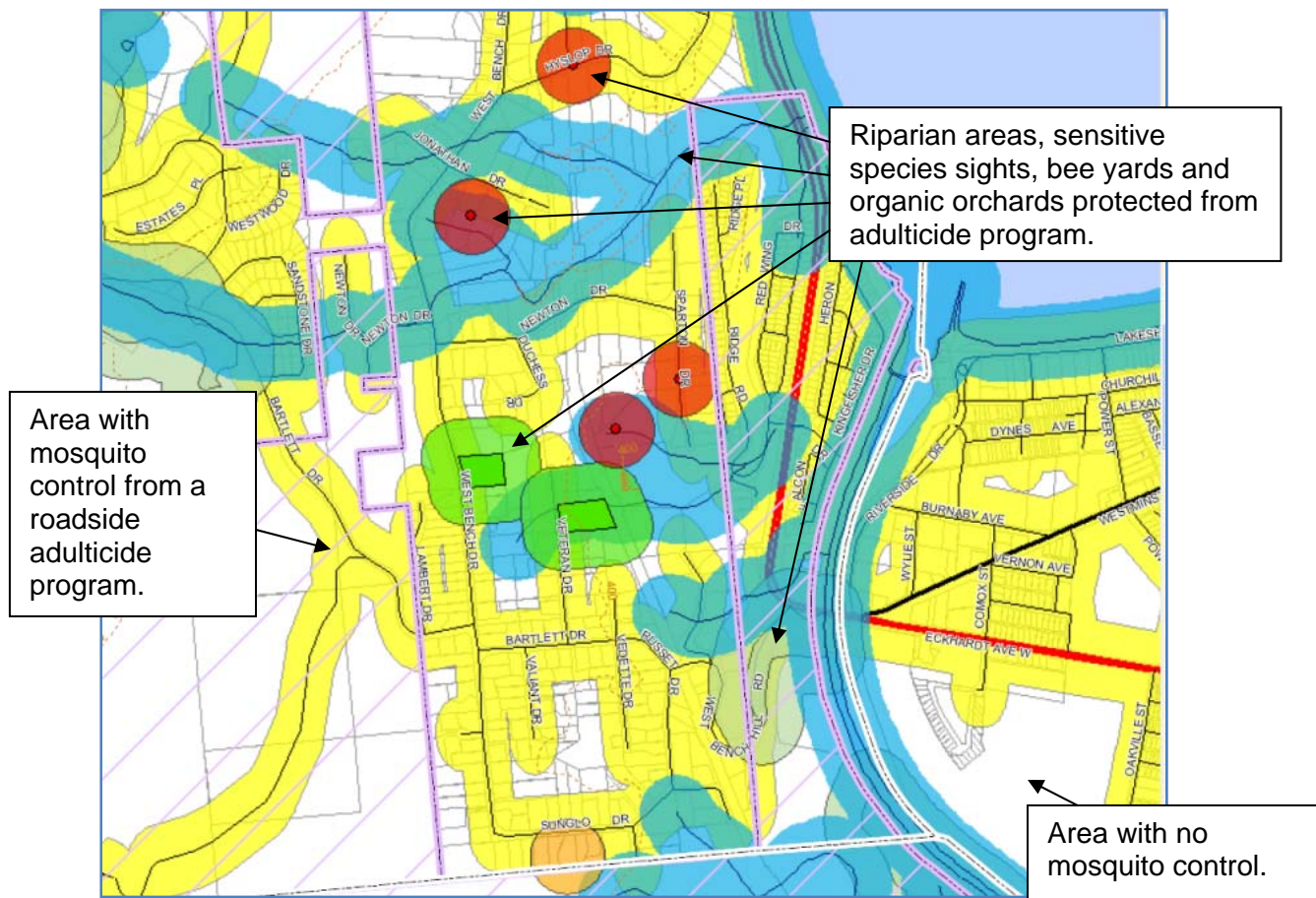
The RDOS has taken a proactive approach. By working with Interior Health, the CDC and biologists from the Ministry of Environment (MoE), criteria to determine where an adulticide program should or should not occur have been developed. Some of the parameters include;

- Spray 100 meters from urban roads
- Avoid riparian and ecologically important habitat areas by a distance of 100 meters
- Avoid organic farms, bee yards, and sensitive species sightings by a distance of 100 meters

Certified organic farms and registered apiaries (bee-yard) locations were obtained through the CDC. Locations of sensitive ecosystems and riparian areas were obtained from the MoE. This information and the above criteria were used in a GIS model that determined what areas should be sprayed, what the coverage will be and what areas should be avoided.

The results of this analysis are shown in the following figure.

Emergency Plan for the Penticton Area



* Feature buffered by 100m

Future Updates

Funding permitting the RDOS will download information on organic farms, apiaries and known sensitive species sightings from the CDC and MoE each year. The GIS model and maps will be updated with the new data to ensure this information remains current.

Other Local Governments

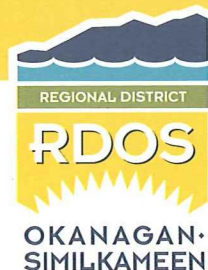
According to the CDC other jurisdictions within BC are also likely to receive WNV in the near future. The RDOS is willing to share general concepts of the field collection and the emergency maps with any of these local governments. For any local governments that are using or have access to the ArcGIS software, the RDOS is also willing to share forms for field data collection, the GIS update model and scripts for creating the emergency maps.

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July 15, 2008

2008 Community Excellence Awards
Union of BC Municipalities
60-10551 Shellbridge Way
Richmond, BC V6X 2W9

Attn: Joslyn Young, Executive Coordinator

I am pleased to offer my support for the application of the Regional District Okanagan-Similkameen to the UBCM 2008 Community Excellence Awards for the West Nile Virus Project.

West Nile Virus is a serious disease with potential life threatening consequences. The Center of Disease Control and Interior Health predict that one of the most likely areas for the West Nile Virus to enter BC is through the Okanagan and Similkameen valleys. I am proud of the RDOS staff that are monitoring and controlling the mosquito populations (vector of West Nile Virus) and for creating an Emergency Plan on what to do in the event West Nile Virus does get established in this area.

Yours truly,

A handwritten signature in black ink, appearing to read "Dan Ashton". The signature is fluid and cursive, with a long horizontal stroke extending to the right.

Dan Ashton, RDOS Chair

TB

Cc: T. Bouwmeester, Information Services Manager
A. Reeder, Engineering Services Manager
P. Hickerson, Public Works Manager