

**CITY OF KIMBERLEY  
INVASIVE PLANT MANAGEMENT PROGRAM  
2015**



**KIMBERLEY**

BC • CANADA

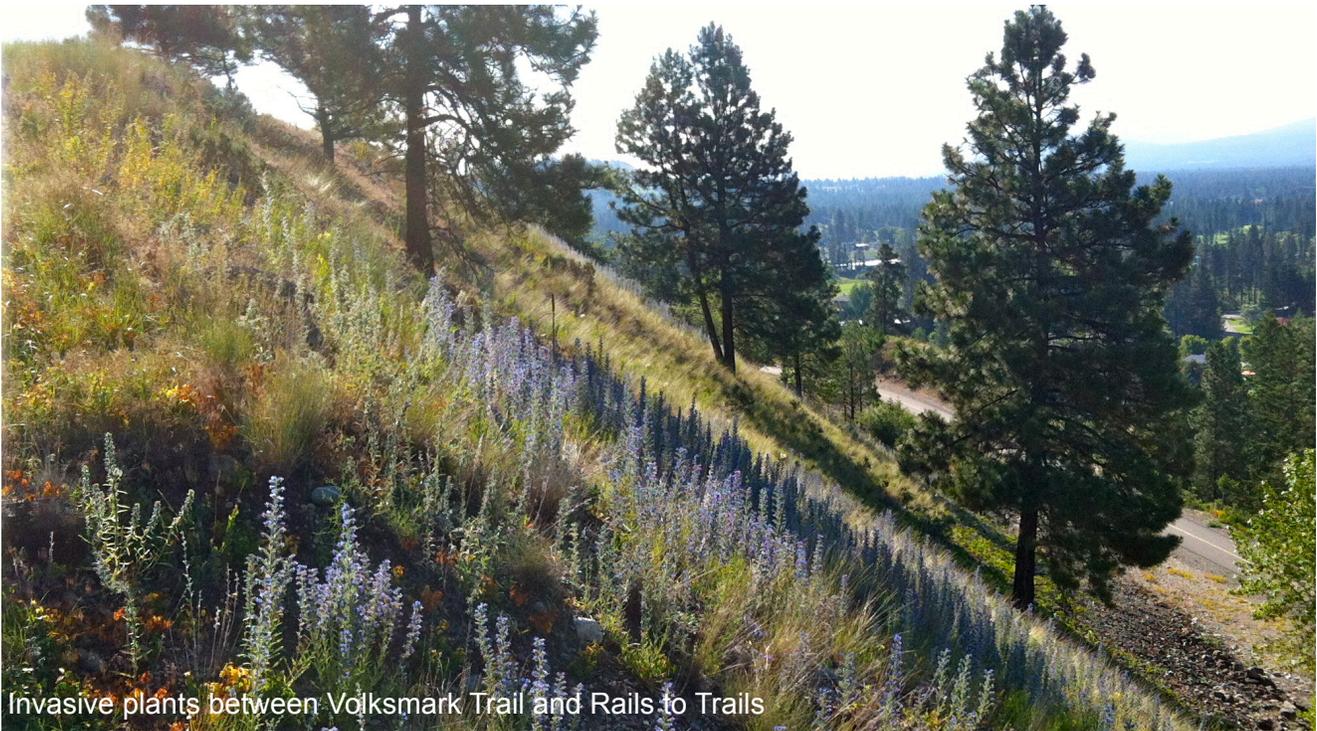


Photo: Cailey Chase

Invasive plants between Volksmark Trail and Rails to Trails

**Submitted on Dec. 7th, 2015 by:**



AND

Mountain View Resources  
mvrtime@gmail.com  
9502 Porteous Rd  
Kimberley, BC  
V1A 3K8

## Contents

INTRODUCTION .....	3
OBJECTIVES .....	3
DESCRIPTION OF KIMBERLEY LANDS AFFECTED BY THE PROGRAM.....	4
WHY KIMBERLEY HAS SO MANY INVASIVE PLANTS.....	5
KIMBERLEY’S BACKGROUND OF INVASIVE PLANT TREATMENTS.....	5
CURRENT INVASIVE PLANT SPECIES WITHIN KIMBERLEY.....	6
BUDGET FOR THE INVASIVE PLANT MANAGEMENT PROGRAM.....	7
EXPLORE ALL POTENTIAL AVENUES OF FUNDING.....	7
PHASED APPROACH TO A PERMANENT, SEASONAL SUPERVISOR FOR THE IPMP.....	8
DESCRIPTION OF PLANNED TREATMENT ACTIVITIES .....	9
Treatment methods will vary from site to site.....	9
Best Practices Guidelines for Treatment and Prevention of Spread .....	9
Other Invasive Plant Control Activities .....	10
ADDITIONAL INFORMATION ABOUT INVASIVE PLANTS.....	11
Definition of Invasive Plants .....	11
How they spread .....	11
Threats Invasive Plant Pose .....	12
Invasive Plants in Context: within Canada and BC.....	13
INVENTORY MAPS	

## **INTRODUCTION**

This Invasive Plant Management Program (IPMP) lays out a plan and guidelines for the control of our extensive invasive plant populations within the limits of the Resort Municipality of Kimberley, British Columbia. The current yearly invasive plant control budget allows for treatment of less than 10% of the invasive plant infestations within the city limits.

The invasive plant populations all have what is called a “seed bank”, which is seed from previous years stored in the soil. For species such as Spotted Knapweed, the seeds stay viable for 35 to 80 years, so treatment on all known invasive plant sites is necessary every year, preventing any new plants from going to seed.

Kimberley is transitioning from a mining town, where land was disturbed and moved, to a resort municipality where our environment is our livelihood. As a Resort Municipality, Kimberley’s economy is increasingly dependent on its natural environment: beautiful views, natural areas and many recreational activities on the land. Kimberley has been deemed the worst municipality for invasive plants in the Regional District of East Kootenay. The current invasive plant infestation threatens our environment, land values & our economy.

---

## **OBJECTIVES**

This Invasive Plant Control Program resides within the Resort Municipality of Kimberley’s *Official Community Plan* under Best Management Practices for the Natural Environment - to control the spread of invasive weeds.

The objectives of this plan are to:

- ▶ contain and treat the large and extensive invasive plant populations,
- ▶ prevent any establishment of new infestations and any new invasive plant species,
- ▶ eliminate Kimberley’s reputation for being the worst for invasive plant infestations,
- ▶ provide an excellent example of land stewardship.

**DESCRIPTION  
OF THE LANDS  
AFFECTED BY  
THE PROGRAM**

- The area encompasses the towns of Kimberley and Marysville, water intakes, city works yard and sewer treatment plants and lands adjacent.
- The area is comprised of urban streets and alleys, neighbourhoods, industrial areas, urban parks, urban trails (Mark Creek, Volksmark, Peaks to Platzl Trails), three watersheds (Mark, Lois and Kimberley Creeks), a decommissioned hydro line and gravel pit, three golf courses (Bootleg Gap, Trickle Creek and Kimberley). Both towns are surrounded by a large mass of private and crown land that provides extensive recreational trails.
- Tourism venues include: The Platzl and downtown area, Kimberley Nordic Trails, Kimberley Nature Park, Lois Creek Trails, and Kimberley Riverside Campground, golf courses, Kimberley Conference Centre, Kimberley Alpine Resort, and various condo complexes.
- Traffic corridors Hwy 95A and Rails to Trails. They are the responsibility of the Ministry of Transportation and Infrastructure, and the Rails to Trails Society who are currently maintaining control on their invasive plant populations.



Photo: Cailey Chase

Invasive plants along Knighton Rd

**WHY KIMBERLEY  
HAS SO MANY  
INVASIVE PLANTS**

Kimberley, having the background of a mining town, is no stranger to disturbing land and moving dirt around. Disturbing land causes the introduction and the establishment of invasive plants. Land disturbance and lack of knowledge and awareness is why Kimberley has such a large infestation.

The mining company, Teck, over the past 10 years, has engaged full reclamation of its lands within Kimberley which includes yearly treatments of the invasive plants, keeping its lands clear of invasives.

There are private developments within Kimberley that have not adhered to the laws of the BC Weed Control Act, and did not include invasive plant control into their development plans. Developments like Forest Crowne and Sullivan Landing are becoming seed sources for invasive plants within Kimberley.

Lack of education and knowledge about invasive plants also contributes to the spread. Costs could be saved by the City in the future through proper planning and consideration for the invasive weed problem and measures to avoid exacerbating it.

---

**KIMBERLEY'S  
BACKGROUND  
OF INVASIVE  
PLANT  
TREATMENTS**

Mountain View Resources has provided the invasive plant treatments from 2012-2015. This year, 2015, Mountainview Resources and Maple Leaf Forestry worked together; both conducting treatments on sections of the city. Maple Leaf Forestry were also brought in for their excellent mapping department.

The herbicide Trillion has been used in the past. The herbicide was applied with backpack sprayers, and side-by-side ATV's with hose reels and booms. Additionally, Mountainview Resources does yearly hand-pull treatments on the Matthew Creek Water Intake. Records of the treatments were submitted to the city: a 2012 report and the standard record forms used by the East Kootenay Invasive Plant Council (EKIPC) for 2013/14.

**CURRENT  
INVASIVE PLANT  
SPECIES WITHIN  
KIMBERLEY**

Blueweed (BW)  
Spotted Knapweed (SK)  
Dalmation Toadflax (DT)  
Common Tansy (TC)  
Houndstongue (HT)  
Wormwood Absinthe (WW)  
Baby's Breath (BB)  
Yellow Hawkweed (YH)  
Orange Hawkweed (OH)  
Common Burdock (BU)  
Flat Peavine (FP)  
Japanese Knotweed (JK)

The extensive invasive plant populations mainly consist of SK, BW and DT. In an ideal invasive plant control program, BW is the first species to be targeted in the spring because it is the first to bolt and flower, followed by SK and then DT.

There are small patches of TC, HT, WW and BB, which are aggressive, and require treatment every year. Also aggressive are OH and YH; there are three known private land owners whose lawns are entirely OH. Notification of the requirement for landowners to control these species under Section 2 of the BC Weed Control Act is recommended once the City has committed to their own invasive plant management plan.

There are populations of BU within the downtown area as well as above the Trickle Creek Golf course along Gerry Sorenson Way, and FP was planted to retain the slope above Hwy 95A on Overweightea Hill; this plant needs to be monitored so that it does not spread out of this area. There are two private sites with JK; one downtown and one in Townsite; these also have to be monitored closely to prevent spreading.

**BUDGET  
FOR THE  
INVASIVE PLANT  
MANAGEMENT  
PROGRAM**

The current yearly invasive plant control budget facilitates treatment of less than 10% of the invasive plant infestations. Independent contractors have been wary to bid on the City of Kimberley invasive plant control contract because the budget allows for only a percentage of the invasive plants to be treated, and with the large percentage of areas not treated it makes it look like the contractors are not doing their job.

The Inventory Maps included in this plan give a snapshot-view of the lands that have been treated with the current limited budget and the lands that still need to be treated within the Resort Municipality of Kimberley.

Lee Holm of Mountain View Resources with 20 years experience as an independent contractor/consultant estimates treating:

- all the streets and back alleys within the urban areas at \$30,000.
- the outer fringes at \$30,000-\$50,000.

It is suggested that the yearly invasive plant control budget be increased to \$60,000.

---

**EXPLORE ALL  
POTENTIAL  
AVENUES OF  
FUNDING**

- ▶ Environmental grants from all sources (CBT has \$50+Million in revenue this year), banks, credit unions, private sector, and have all related clubs & organizations apply for specific project funding .(i.e. Wildsight/Mark Creek, Nordic club/ski trails,etc)
- ▶ Consider implementing a parcel tax (municipal or regional district)
- ▶ Employment/educational/skills grants/subsidies...provincial & federal,
- ▶ Bear Aware programs, etc. get funding...Establishing a similar program to make residents WEED aware could attain funding.

**PHASED  
APPROACH TO A  
PERMANENT,  
SEASONAL  
SUPERVISOR FOR  
THE IPMP**

**2016** - Hire independent contractors to provide control on all known and suspected invasive plant sites for spring, summer and fall. This includes inner city streets, alleys and city owned land as well as all of the large fringe areas.

- ▶ Form an IPMP Committee,
- ▶ Conduct a brief tour of infested sites.
- ▶ Continue efforts to find funding for the IPMP.

**2017** - Hire a qualified and dedicated applicant for permanent, seasonal supervisor for the City of Kimberley's Invasive Plant Management Program; who can supervise a city crew that conducts a systematic hand-pull in the inner city streets, alleys and city owned lots throughout the summer and fall. Independent contractors are hired to treat the large fringe areas for spring, summer and fall on all known and suspected invasive plant sites.

- ▶ IPMP Committee continues efforts to educate the public, developers and municipal workers on preventing the spread of invasive plants and to find funding for the IPMP.

**2018** - The IPMP Supervisor oversees the same treatment as in 2017.

- ▶ Hire a permanent, seasonal crew to hand-pull the inner city streets, alleys and city owned lots.
- ▶ IPMP Committee continues efforts to educate the public, developers and municipal workers on preventing the spread of invasive plants and to find funding for the IPMP.

**2019** - The IPMP Supervisor oversees the same treatment as in 2017/18.

- ▶ IPMP Committee continues efforts to educate the public, developers and municipal workers on preventing the spread of invasive plants and to find funding for the IPMP.

**2020** - The IPMP Supervisor oversees the same treatment as in 2017/18/19.

**DESCRIPTION  
OF PLANNED  
TREATMENT  
ACTIVITIES**

**Treatment methods will vary from site to site:**

- ▶ Mechanical treatment (mowing, weed eating)
- ▶ Chemical treatment (herbicide)
- ▶ Hand Pulling
- ▶ Target Grazing (trained goat herd)
- ▶ Biological control (releasing insect predators for specific invasive plants)

**Best Practices Guidelines for Treatment and Prevention of Spread:**

1. Every effort must be made to eradicate the small isolated infestations and monitor these sites every year. Preventing new plants from going to seed.
2. Larger infested areas must be treated in an effort to isolate and prevent the spread of these populations. Target grazing may be used at these sites.
3. All herbicide applications will be supervised by a licensed applicator.
4. Biological control can be undertaken where invasive plants are not accessible for mechanical or chemical treatments such as the steep slope areas below Volksmark Trail and above Hwy 95A between Kimberley and Marysville.
5. Educate and collaborate with municipal workers and developers in preventing the spread. This includes the movement of dirt, seasonal timing of mowing roadside weeds, cleaning equipment before moving to new sites, stock piling and clearly labeling infested dirt and fill materials.
6. A record will be kept of each infested site, that includes: geographical coordinates, size of site, weed density, and control measures used, and will be retained in a central data file. There is potential for partnering with EKIPC's Invasive Alien Plant Program database.

**DESCRIPTION  
OF PLANNED  
TREATMENT  
ACTIVITIES**

**Other Invasive Plant Control Activities:**

- ▶ Educational Programs: East Kootenay Invasive Plant Council provides excellent programs that educate the public about invasive plants and the best management practices for prevention and control. In order to prevent the introduction and establishment of new invasive plants, it is important for area residents and municipal workers to be able to identify invasive species and report them to Kimberley's Invasive Plant Management Program. Citizens are encouraged to report areas of concern to the city.
  
- ▶ Community volunteer invasive plant pulls in collaboration with: Kimberley Nature Park, Friends of Lois Creek, Alpine Crescent neighbourhood, Forest Crowne neighbourhood, Wildsight, Scouts, Girl Guides, Lions, Schools.
  
- ▶ Approach private land holders, developers, and neighbourhood associations to inform, educate and encourage them to treat their lands. (ie. Regional District of East Kootenay, Forest Crowne, Kimberley Alpine Resort, Northstar Mountain Resort, Timberstone.)
  
- ▶ Safe work procedures exist in accordance with the Occupational Health and Safety Act (OH&S) for potentially dangerous activities conducted by municipal workers or by contractors. These must be documented and demonstrated by all parties.
  
- ▶ This plan and the resulting invasive plant management actions taken will be reviewed on a yearly basis and updated or modified where required.

## ADDITIONAL INFORMATION ABOUT INVASIVE PLANTS

(Adapted from the *Resort Municipality of Whistler Invasive Species Management Plan*, Pg. 3-5)

### Invasive Plants:

Invasive plants have three defining characteristics:

- 1) they are introduced by human activities, wind, water and wildlife to an area they didn't naturally inhabit;
- 2) they establish successfully at that location; and
- 3) they are aggressive colonizers of adjacent habitat.

---

### How they spread:

The introduction of invasive species to an area can occur through a variety of conduits. First, there are geographic routings along which invasive species can travel, such as wind, water currents, and natural or man-made corridors. Invasive species are introduced via these routings or pathways by vectors, which can be defined as organisms, objects or vehicles (e.g. cars, maintenance and construction trucks, excavation equipment, boats, boots, and humans) that carry invasive species from one location to another, thereby facilitating their incursion to other locations. Invasive species may be introduced to gardens or landscaped areas inadvertently by gardeners or horticulturalists who are unaware of the potential impacts of these species.



Spotted Knapweed along Jim Ogilvie Way



Dalmatian Toadflax in the Skatepark

Photos: Cailey Chase

## Threats:

Invasive Plants have the capacity to establish quickly and spread rapidly, out compete indigenous species for food and other resources, they can form dense monocultures, out-shade less aggressive native plants and prevent native species from reproducing. Because these species did not evolve in an infested location, the controls that would normally keep population sizes in check (e.g. insects, viruses, fungi) are not always present or effective.

The key threats presented by invasive plant species include:

- ▶ decreased biodiversity;
- ▶ decreased habitat for wildlife;
- ▶ changes in food webs by destroying/replacing native food sources;
- ▶ altered water regime which can lead to soil erosion and/or less available water;
- ▶ changes to soil chemistry;
- ▶ increase in wildfire hazard due to different plant conditions;
- ▶ damage to roads, building foundations, and other developments;
- ▶ reduction in crop yields;
- ▶ outdoor tourism and recreation areas inundated by invasive monocultures;
- ▶ decrease in property values; and
- ▶ decrease in indigenous medicinal plants and related cultural practices.

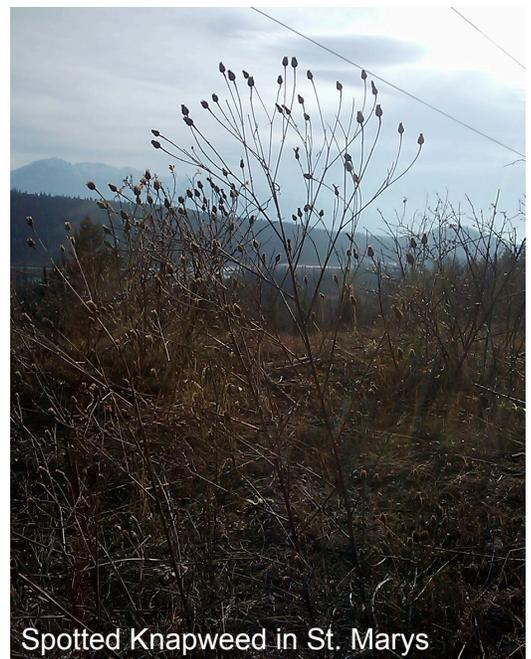


Photo: Cailey Chase

**Invasive Plants in  
Context: within  
Canada and BC**

It is widely recognized that invasive species pose a variety of threats at global, national and regional levels and this issue has been addressed by federal and provincial governments. In 2004, the threat of invasive species in Canada was addressed in a federal government report entitled *Invasive Alien Species Strategy for Canada*. This strategy continues to play a critical role in the management of invasives across the country, focusing on the prevention of introduction, early detection and response to new invasives, and managing established invasives through containment, reduction and eradication.

In BC, the threat of invasive species was also recognized and addressed in 2004 through the *Invasive Alien Species Framework for BC: Identifying and Addressing Threats to Biodiversity*. This framework identified the need for collaboration and action across levels of government in order to facilitate coordinated science and policy efforts to minimize the threat of invasive species to BC. In 2012, the Invasive Species Council of BC released the *Invasive Species Strategy for British Columbia*, a five-year plan detailing a comprehensive framework for effectively managing invasive species through enhanced and coordinated management and legislative approaches. These plans continue to serve as important pieces in guiding provincial and regional action on invasive species management.



Blueweed around trees planted by the city

Photo: Cailey Chase

570000

575000



**KIMBERLEY**  
BC • CANADA

**2015 Herbicide Treatments  
OVERVIEW MAP**

-  Municipal Boundary
-  Potential Treatment Areas  
(City Owned Properties)
-  Urban Area
-  2015 Treatment Area

0 500 1,000 1,500  
metres

UTM 11, NAD 83  
1:50 000

GRID NORTH  
Declination:  
14° 19'E

File: ..\HERBIDICE\KIMBERLEY\MXD  
OVERVIEW.MXD  
Date: 03 December 2015



5510000

5510000

5505000

5505000

5500000

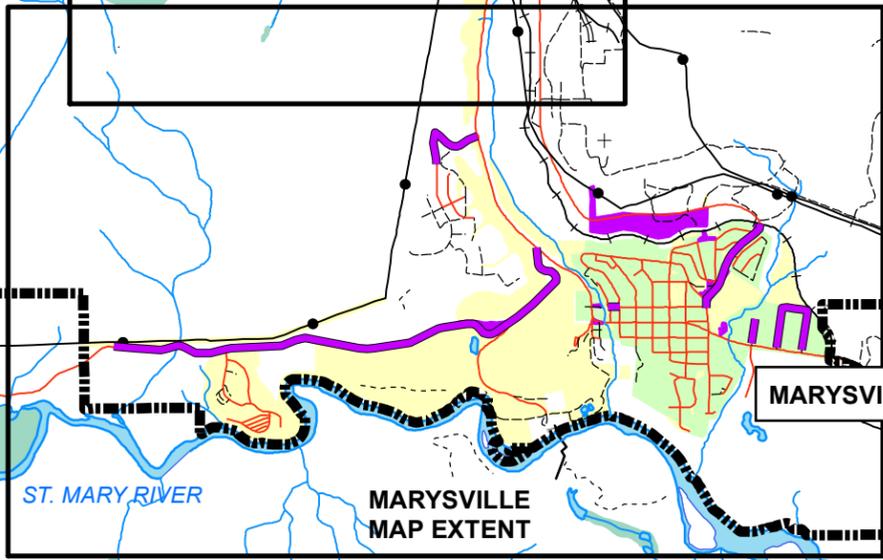
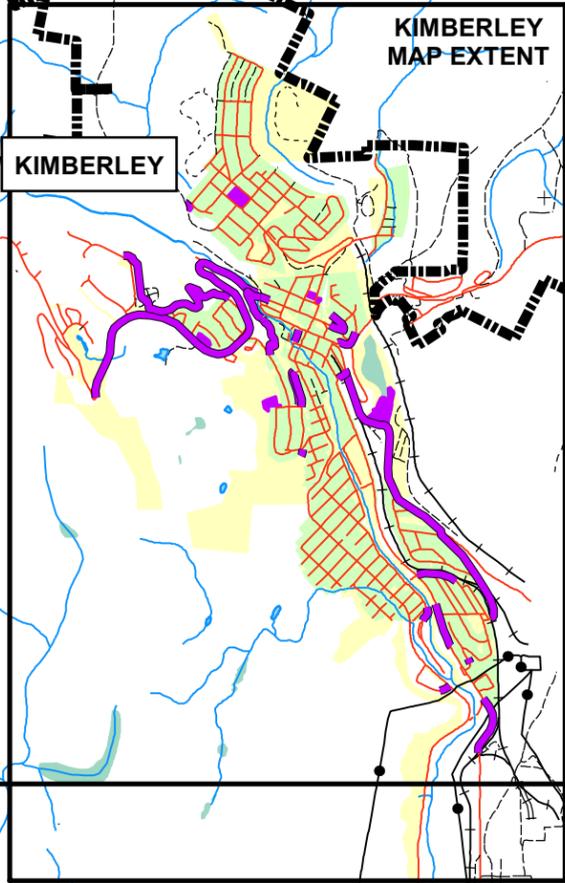
5500000

5495000

5495000

570000

575000



**City of Kimberley  
Invasive Plants**

**2015 Proposed Treatment**

Description	area (ha)
City of Kimberley property or area	434.2
Roads within urban area (62650m @ 6m (3m each side) / 10000m <sup>2</sup> per ha)	37.6
<b>TOTAL</b>	<b>471.8</b>

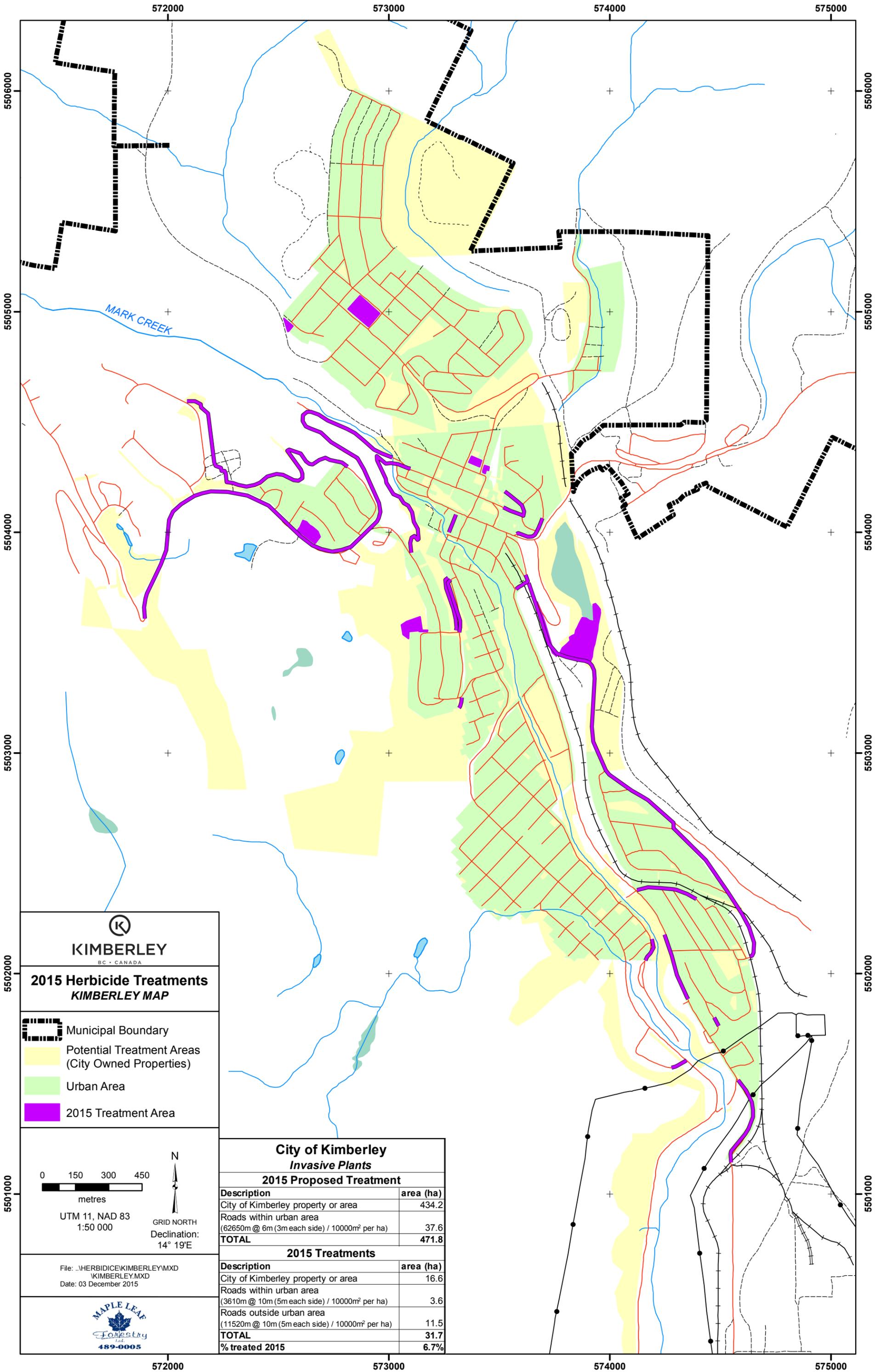
**2015 Treatments**

Description	area (ha)
City of Kimberley property or area	16.6
Roads within urban area (3610m @ 10m (5m each side) / 10000m <sup>2</sup> per ha)	3.6
Roads outside urban area (11520m @ 10m (5m each side) / 10000m <sup>2</sup> per ha)	11.5
<b>TOTAL</b>	<b>31.7</b>
<b>% treated 2015</b>	<b>6.7%</b>

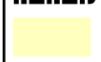
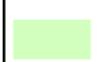
MARK CREEK

ST. MARY RIVER

MARYSVILLE

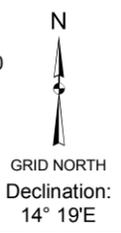


**2015 Herbicide Treatments  
KIMBERLEY MAP**

-  Municipal Boundary
-  Potential Treatment Areas (City Owned Properties)
-  Urban Area
-  2015 Treatment Area



UTM 11, NAD 83  
1:50 000



File: ..\HERBIDICE\KIMBERLEY\MXD  
KIMBERLEY.MXD  
Date: 03 December 2015



**City of Kimberley  
Invasive Plants**

2015 Proposed Treatment	
Description	area (ha)
City of Kimberley property or area	434.2
Roads within urban area (62650m @ 6m (3m each side) / 10000m <sup>2</sup> per ha)	37.6
<b>TOTAL</b>	<b>471.8</b>

2015 Treatments	
Description	area (ha)
City of Kimberley property or area	16.6
Roads within urban area (3610m @ 10m (5m each side) / 10000m <sup>2</sup> per ha)	3.6
Roads outside urban area (11520m @ 10m (5m each side) / 10000m <sup>2</sup> per ha)	11.5
<b>TOTAL</b>	<b>31.7</b>
<b>% treated 2015</b>	<b>6.7%</b>

571000 572000 573000 574000 575000 576000



**2015 Herbicide Treatments  
MARYSVILLE MAP**

- Municipal Boundary
- Potential Treatment Areas (City Owned Properties)
- Urban Area
- 2015 Treatment Area

0 150 300 450  
metres

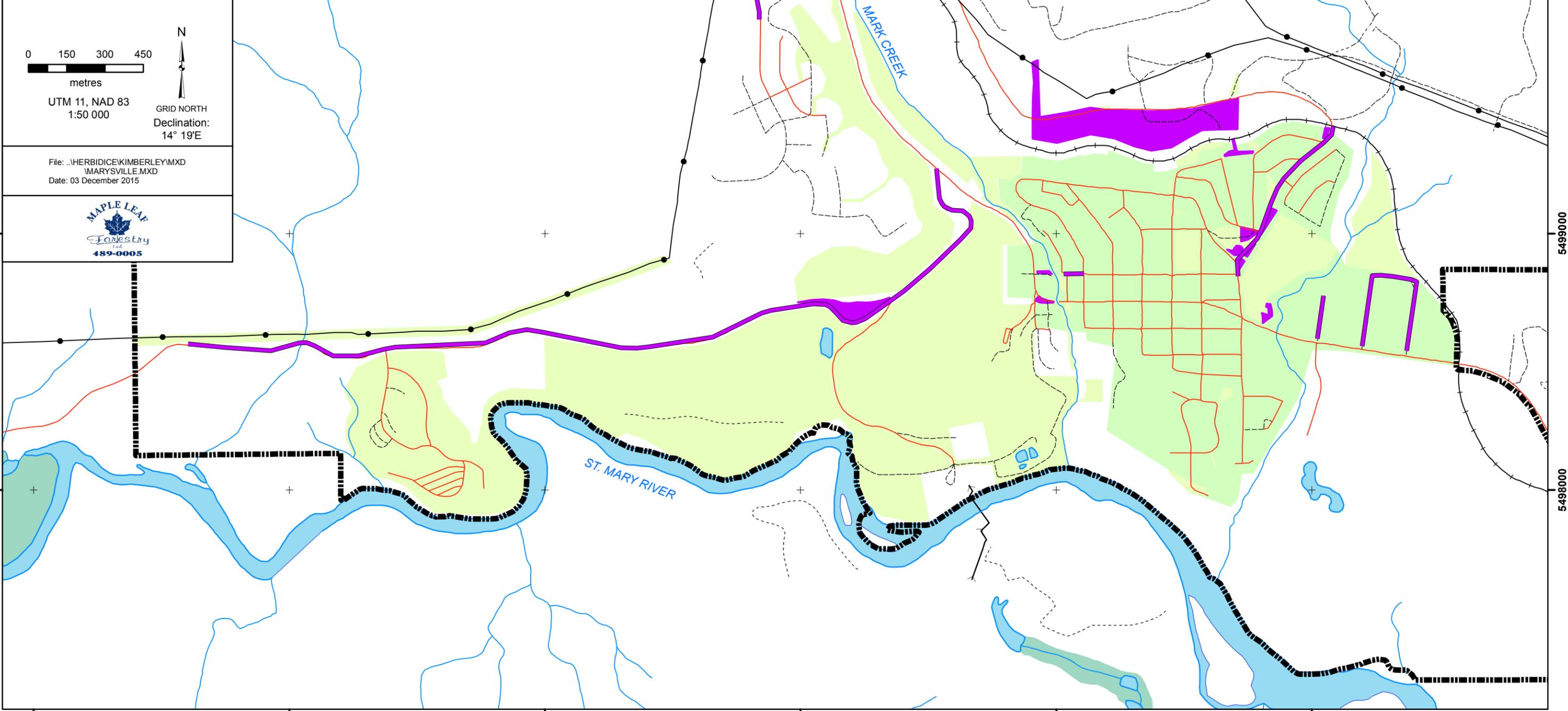
UTM 11, NAD 83  
1:50 000

GRID NORTH  
Declination:  
14° 19'E

File: ..\HERBIDICE\KIMBERLEY\MXD  
MARYSVILLE.MXD  
Date: 03 December 2015



City of Kimberley <i>Invasive Plants</i> 2015 Proposed Treatment	
Description	area (ha)
City of Kimberley property or area	434.2
Roads within urban area (62650m @ 6m (3m each side) / 10000m <sup>2</sup> per ha)	37.6
<b>TOTAL</b>	<b>471.8</b>
2015 Treatments	
Description	area (ha)
City of Kimberley property or area	16.6
Roads within urban area (3610m @ 10m (5m each side) / 10000m <sup>2</sup> per ha)	3.6
Roads outside urban area (11520m @ 10m (5m each side) / 10000m <sup>2</sup> per ha)	11.5
<b>TOTAL</b>	<b>31.7</b>
<b>% treated 2015</b>	<b>6.7%</b>



571000 572000 573000 574000 575000 576000

5500000

5499000

5498000

5500000

5499000

5498000