King County

1200 King County Courthouse
516 Third Avenue
Seattle, WA 98104

KING COUNTY

Signature Report

June 14, 2011

Motion 13494

Proposed No. 2011-0151.2 **Sponsors** Phillips

A MOTION stating that the executive has responded to the requirements for a work plan for noxious weed control by county land managers in the 2011 Budget Ordinance, Ordinance 16984, Section 81, Proviso P1.

WHEREAS, the 2011 Budget Ordinance, Ordinance 16984, included a proviso that limits the expenditure or encumbrance of $158,000 until the executive transmits and the council adopts by motion a work plan addressing noxious weeds on county lands, and

WHEREAS, the proviso is in Ordinance 16984, Section 81, Proviso P1, and

WHEREAS, the work plan called for in the proviso has been completed and transmitted to the council by the executive, and

WHEREAS, the work plan includes: identification by county agency of the number of uncontrolled noxious weed sites which are present on county lands; a methodology to reduce or eliminate any backlog of uncontrolled noxious weed sites on county lands to the extent that the proportion of uncontrolled sites on county lands exceeds the proportion of uncontrolled sites on non-county lands; a description of a process to achieve control of noxious weeds on county sites; an analysis of consideration of contracts with the department of adult and juvenile detention community work program for work crews to provide labor for such noxious weed control projects; and identification of a time frame within which substantial control of noxious weeds will be

achieved on county-owned lands, in satisfaction of the requirements specified in the proviso;

NOW, THEREFORE, BE IT MOVED by the Council of King County:

Through the transmittal of the work plan, entitled Work Plan Addressing Noxious Weeds on County Lands, Attachment A to this motion, the executive has responded to

the requirements of the 2011 Budget Ordinance, Ordinance 16984, Section 81, Proviso P1.

Motion 13494 was introduced on 4/11/2011 and passed by the Metropolitan King County Council on 6/13/2011, by the following vote:

Yes: 8 - Mr. Phillips, Mr. von Reichbauer, Mr. Gossett, Ms. Hague, Ms. Patterson, Mr. Ferguson, Mr. Dunn and Mr. McDermott
No: 0
Excused: 1 - Ms. Lambert

KING COUNTY COUNCIL
KING COUNTY, WASHINGTON

Larry Gossett, Chair

ATTEST:

Anne Noris, Clerk of the Council

Attachments: A. Work Plan Addressing Noxious Weeds on County Lands

13494

Work Plan Addressing Noxious Weeds on County Lands

Prepared By
Roy Brunskill and Steven J. Burke
March 2011

King County
Department of
Natural Resources and Parks
Water and Land Resources Division
Noxious Weed Control Program

Executive Summary

This work plan is submitted in accordance with the 2011 King County Noxious Weed Control Program budget proviso (Ordinance No. 16984, Section 81, P1), which directs the executive to submit a work plan for noxious weed control activities by county land managers. This report provides: (1) identification, by county agency, of the numbers of uncontrolled noxious weed sites which are present on county lands; (2) a methodology to reduce or eliminate any backlog of uncontrolled noxious weed sites on county lands, to the extent that the proportion of uncontrolled sites on county lands exceeds the proportion of uncontrolled sites on non-county lands; (3) a description of a process to achieve control of noxious weeds on county sites; (4) an analysis of consideration of contracts with the Department of Adult and Juvenile Detention (DAJD) community work program for work crews to provide labor for such noxious weed control projects; and (5) identification of a time frame within which substantial control of noxious weeds will be achieved on county owned lands.

This work plan identifies uncontrolled regulated noxious weed sites documented in 2010 by King County Noxious Weed Control Program staff. The work plan shows that the backlog of uncontrolled sites is small (129 sites) and manageable. County agencies have, in general, been doing a very good job of controlling regulated noxious weeds. Agencies also identified steps to continue improving their noxious weed control processes.

Agencies have strategies in place that will reduce and/or eliminate uncontrolled noxious weed sites found within their areas of responsibility. Control of regulated noxious weeds by county agencies has been improving since 2003, and currently exceeds that for non-county land managers. All agencies are utilizing an Integrated Pest Management Approach (IPM) when addressing noxious weed control needs. Instead of utilizing a scheduled control plan, agencies first assess noxious weed infestations and then select an appropriate control strategy. This approach is consistent with the County's IPM Executive Order. County agencies have also identified timelines for optimal control of the regulated noxious weed sites found on their lands.

An analysis of utilizing DAJD crews to control regulated noxious weed revealed that several agencies frequently utilize these crews for noxious weed control. This will continue for the foreseeable future, with the possibility of a modest increase in their use for additional regulated noxious weed control requirements. Agencies with small regulated noxious weed control needs and with existing grounds maintenance staff, are likely not able to cost-effectively use DAJD crews. Their in-house staff usually performs needed regulated noxious weed control during other routine maintenance activities. Agencies with larger land management responsibilities have trained and licensed staff available to perform regulated noxious weed control activities to a high standard in a cost effective manner. The use of DAJD crews is also limited in some agencies (in particular the Parks and Recreation Division and Roads Maintenance Division) by current collective bargaining agreements.

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Work Plan Addressing Noxious Weeds on County Lands

Introduction

This work plan is submitted in accordance with the proviso in the 2011 King County budget ordinance (Ordinance No. 16984, Section 81, P1) which requires that the Executive submit a work plan on noxious weed control by county land managers. As specified in that legislation, this work plan provides: 1) identification, by county agency, of the numbers of uncontrolled noxious weed sites which are present on county lands; 2) a methodology to reduce or eliminate any backlog of uncontrolled noxious weed sites on county lands, to the extent that the proportion of uncontrolled sites on county lands exceeds the proportion of uncontrolled sites on non-county lands; 3) a description of a process to achieve control of noxious weeds on county sites; 4) an analysis of consideration of contracts with the Department of Adult and Juvenile Detention (DAJD) community work program for work crews to provide labor for such noxious weed control projects; and 5) identification of a time frame within which substantial control of noxious weeds will be achieved on county owned lands.

Background

A noxious weed is defined by state law (Chapter 17.10 RCW) as a plant that when established is highly destructive, competitive, or difficult to control by cultural or chemical practices. Noxious weeds can severely impact agricultural production, reduce wildlife habitat and other environmental values, impair recreational use of open space and aquatic areas and pose public health risks.

Noxious weeds are most commonly introduced to the region through human activities. They have been introduced into environments in which they did not evolve and they generally have few natural enemies to limit their reproduction and spread. Of the tens of thousands of introduced plant species, only a small fraction presents a sufficient threat to justify noxious weed status. The 2010 King County Noxious Weed List contains 94 regulated noxious weed species and 31 non-regulated noxious weed species (Appendix B). The purpose of the state noxious weed law is "to limit economic loss and adverse effects to Washington's agricultural, natural and human resources due to the presence and spread of noxious weeds on all terrestrial and aquatic areas in the state."

There are three classifications of noxious weeds. Class A noxious weeds are not native to the state, are of limited distribution or are unrecorded in the state and pose a serious threat to the state. Class B noxious weeds are not native to the state, are of limited distribution or are unrecorded in a region of the state, and pose a serious threat to that region. Class C noxious weeds are all other noxious weeds. Chapter 17.10 RCW requires all landowners to eradicate Class A noxious weeds. It also empowers the State and County Noxious Weed Board to require landowners to control Class B and Class C noxious weeds. The majority of Class B and some Class C noxious weeds are regulated in King County in this way.

As of 2010, there are 2,317 active regulated noxious weed sites on King County managed properties. Of these sites, 34 are Class A noxious weeds sites; 2,198 are

Class B noxious weeds sites; and 85 are Class C noxious weeds sites. An active site is a location where noxious weeds have been observed and long-term control has not yet been achieved. These sites are therefore targeted for regular inspection. In 2010, the King County Noxious Weed Control Program (KCNWCP) staff was able to check 1,958 of these active sites to ascertain control status.

Noxious weeds can be broken down into three basic categories based on life-cycle: annual, bi-annual and perennial weeds. Annual weeds grow from seed and are able to reproduce in one season. Bi-annual weeds spend their first year as a low growing vegetative plant (called a rosette) which then produces a flowering stalk and goes to seed in its second year. After the plant produces its seeds, the plant will die. Perennial weeds are plants that live for more than three years producing seeds every year and may also spread from plant fragments. In terms of weed control, perennial noxious weeds are typically harder to control because the entire root structure needs to be killed to be effectively controlled.

If noxious weeds are allowed to establish in an area and are allowed to produce seeds for many years, they can produce hundreds of thousands seeds. These seeds do not start growing all at once; a lot of the noxious weed seeds can remain dormant for long periods of time, in some cases up to 60 years. This ability creates what is known as a seed bank and is why the first step in controlling most noxious weeds is to prevent seed production. Accumulated seed banks, together with additional introductions of noxious weed seeds, are why it typically takes many years of control work to eradicate noxious weed infestations on any particular site. Control of a noxious weed site is considered achieved when noxious weed seeding and other means of spread from the site is prevented in that year.

Strategies for controlling noxious weeds in King County are based on Integrated Pest Management (IPM). The goal when utilizing IPM is to maximize effective control and to minimize environmental, economic and social damage. When utilizing IPM, control strategies employ either manual, mechanical, chemical, cultural or biological control methods. Typically a combination of methods is the most effective.

Controlling noxious weeds by mowing (mechanical control) typically is not effective since mowing does not kill the roots of the noxious weed. However mowing can effectively delay the weeds from flowering and setting seed until a more permanent control strategy such as digging out the weeds, covering or applying a systemic herbicide (which kills the roots).

County Lands—A Summary

King County manages an extensive network of public lands, consisting of approximately 4,269 parcels. These parcels total 33,070 acres or just fewer than 2.5 percent of the land area in the county.

These lands include transit, wastewater and solid waste facilities, parks, trails, open space, and stormwater retention ponds. The county also owns or manages approximately 1,700 linear miles of roads and rights-of-way (ROW). As a land

owner, King County is responsible for controlling the regulated noxious weeds found on its property.

These lands vary greatly in area, condition and land use and are managed by a range of county agencies. The major agencies are: Department of Transportation (Road Services Division and Metro Transit Division), Department of Natural Resources and Parks (Parks and Recreation Division, Water and Land Resources Division, Solid Waste Division and Wastewater Treatment Division) and the Department of Executive Services (Facilities Management Division).

Noxious Weeds on County Lands

A wide variety of noxious weeds infest county lands. These weeds are broadly representative of the weeds that occur in the non-urban parts of the county. In 2010, there were 2,317 active regulated noxious weed sites infesting county managed lands, or 21 percent of the total number (11,215) of active regulated sites in the county. A breakdown of the more commonly found regulated noxious weed sites on county lands is given below (Figure 1).

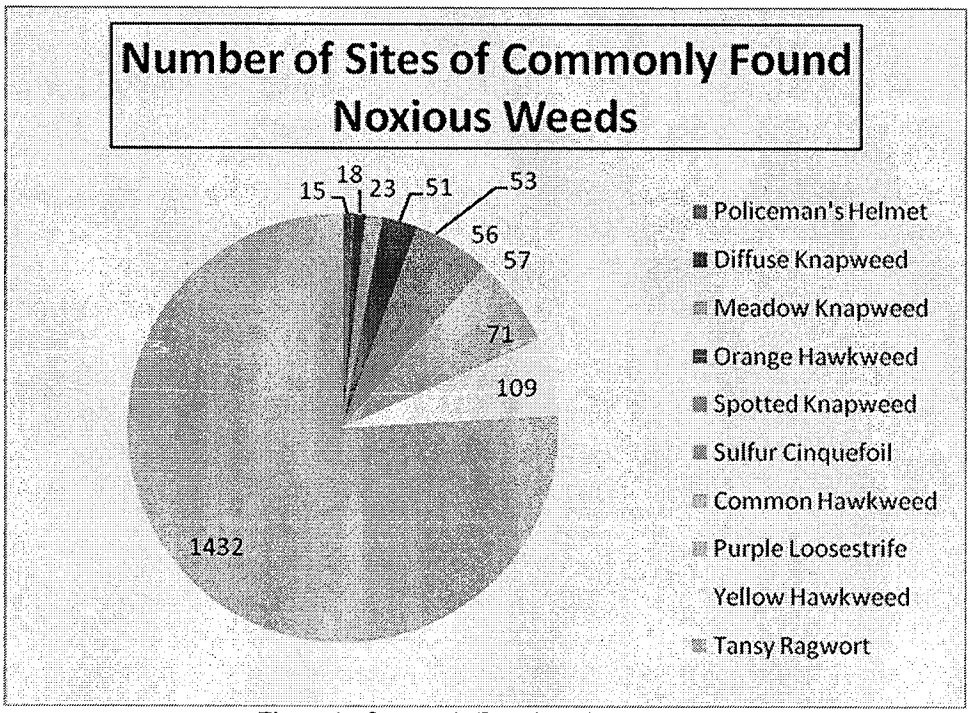

Figure 1: Commonly Found Noxious Weeds*

* There are an additional 20 regulated weed species making up 72 additional sites

Control of Noxious Weeds on County Lands

Overall, the percentage of controlled sites containing regulated noxious weeds (weeds that the landowner is legally required to control) on county-managed lands (93 percent) slightly exceeds the percentage of control by non-county land managers (Figure 2). Control of a noxious weed infestation is defined as the elimination of seeding and prevention of spread. The percentage of regulated noxious weeds sites controlled in 2010 by each management agency is shown in Table 1. There is a

trend over time of generally increasing percentages of control for regulated weeds for both county lands and non-county lands.

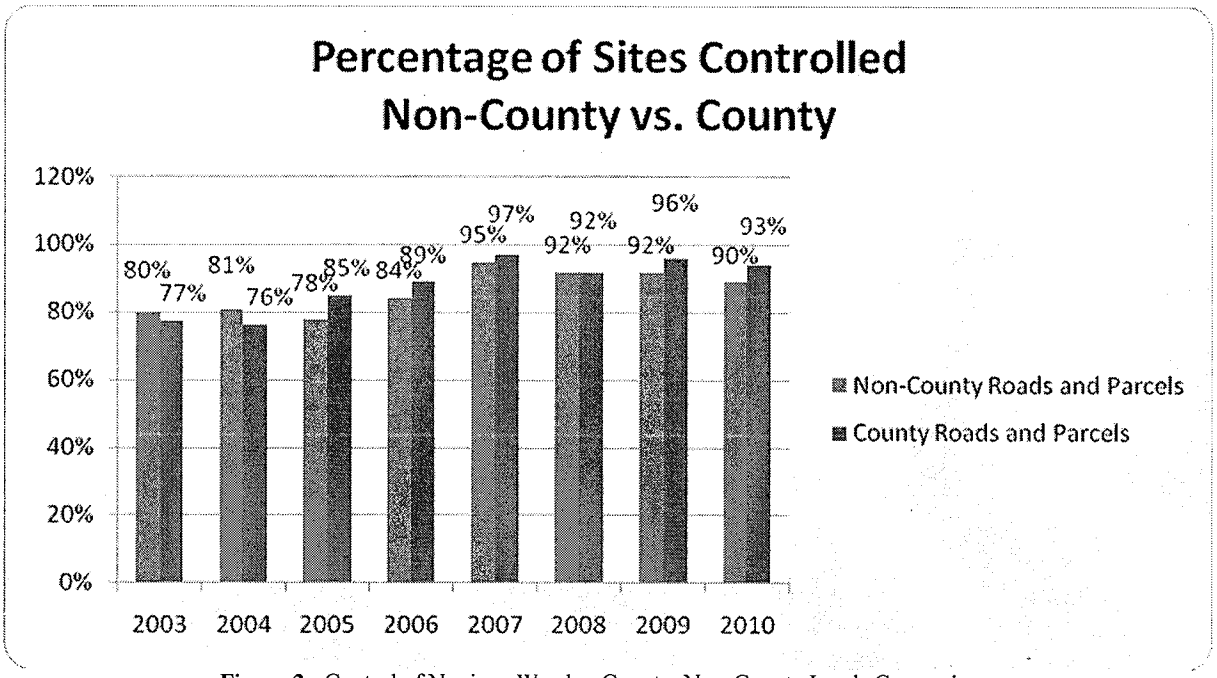

Figure 2: Control of Noxious Weeds - County, Non-County Lands Comparison

Identification by County Agency of the Numbers of Uncontrolled Sites

During the 2010 weed season (approximately April-October), staff was able to review 1,957 regulated noxious weeds sites that infest county owned/managed lands throughout King County. County land managers controlled noxious weeds on 1,828 sites, leaving only 129 uncontrolled sites. A summary of each agency's weed control activities and the number of uncontrolled sites are provided in Table 1. A more detailed listing of regulated noxious weed sites on county lands for each county land manager (including a description of the backlogged uncontrolled sites) is provided in Appendix A. A detailed parcel listing of these county lands was used to derive these tables and is available on request.

Division	Number surveyed	Number Controlled	Number Uncontrolled	Percent Sites Controlled
King County - Drainage Services	94	89	5	95%
King County - Flood Hazard Reduction Services	13	13	0	100%
King County - Parks and Recreation	112	90	22	80%
King County Property Services	11	10	1	91%
King County Road Services Division	1709	1609	100	94%
King County Metro Transit	5	4	1	80%
King County Solid Waste Division	8	8	0	100%
King County Wastewater Treatment Division	5	5	0	100%

Table 1: Control of Regulated Noxious Weed Sites by County Land Managers

A Methodology to Reduce or Eliminate any Backlog of Uncontrolled Noxious Weed Sites (including an analysis of consideration of contracts with the Department of Adult and Juvenile Detention)

Noxious weed control plans for each agency are summarized below and in Appendix A.

Parks and Recreation Division

King County Parks and Recreation Division (Parks) management responsibilities cover an area of 26,000 acres which includes 4,152 acres of active recreation park lands; 3,415 acres of working resource forest lands; 11,725 acres of multi-use lands; and 6,708 acres of ecological natural area lands. Even with the large land area being taken into account, regulated noxious weed control in Parks managed lands has been good.

There were 112 known regulated noxious weed sites identified on Parks managed properties in 2010. Control was not achieved on 22 of these sites. Twelve of these sites involved garden and purple loosestrife of which seven are included in a grant project that the KCNWCP will begin in 2011 in collaboration with Parks. The one Brazilian elodea site that was not controlled is also included in the grant project area. There were three uncontrolled tansy ragwort and two orange hawkweed sites that were not controlled. Additionally there was one each of yellow hawkweed, policeman's helmet, perennial sowthistle and spotted knapweed not controlled in 2010.

Parks is committed to improving their noxious weed control efforts by adding 1.5 field staff that will prioritize the control of regulated noxious weeds. This will add an additional 2,000 hours of weed control capability. The additional capacity in combination with existing staffing levels will ensure that current noxious weed control requirements and any new noxious weed infestations will be managed. The new staffing will also allow Parks to continue to remove non-regulated noxious weeds and other invasive vegetation.

Parks' commitments to noxious weed control are clearly spelled out in the 2010 *King County Open Space Plan: Parks, Trails, and Natural Areas (Open Space Plan)*:

> *"On all park open space sites, King County will develop a coordinated strategy for preventing, monitoring and controlling infestations of state-listed noxious weeds, and where feasible, other non-native weeds of concern."*

Parks' noxious weed control utilizes an IPM approach. Staff selects the optimum combination of manual, mechanical and chemical methods to control noxious weeds. Selection is based on type of noxious weeds to be controlled, the amount of noxious weeds and the type of area where the infestation is located. Parks also has a large volunteer base to draw upon to control noxious weeds in many situations; DAJD work crews are currently not allowed under applicable bargaining agreements. However, expanded control of non-regulated noxious weed infestations may be suitable for DAJD crews if allowed under future bargaining agreements and if additional funding can be secured.

Road Services Division

Road Services Division (RSD) is tasked with controlling regulated noxious weeds along approximately 1,700 miles of county maintained roads. RSD also has maintenance responsibilities for an additional 225 parcels representing 1,320 acres. RSD has the most known regulated noxious weed sites of all county agencies. RSD also has responsibility for the largest geographic area with potential noxious weed management issues. Even with these factors, RSD has been doing a very good job of controlling regulated noxious weed sites.

During 2010, there were 1,709 confirmed regulated noxious weed sites on RSD managed lands. Control was not confirmed for 100 of these sites. Most of the 100 sites (93) were tansy ragwort sites, with 1 purple loosestrife, 1 perennial sowthistle, 3 orange hawkweed and 2 common hawkweed sites making up the remainder. In addressing the uncontrolled sites, RSD is reevaluating noxious weed staffing levels to see whether or not to add a third noxious weed control crew. RSD is also considering investing in new geographic positioning system (GPS) / geographic information systems (GIS) to increase efficiencies.

RSD incorporates an IPM program within its maintenance responsibilities to control noxious weeds. As most RSD regulated noxious weed infestations are found on road ROW, Road Services Division staff need to be able to control weeds safely, economically and in an environmentally sound manner. Most control activities are accomplished by utilizing spot applications of low toxicity Washington State Department of Agriculture (WSDA) approved herbicides. RSD is well equipped to undertake weed control utilizing this methodology. Their staff also relies on road shoulder mowing to cut back vegetation. Mowing activities can keep noxious weed growth at bay until noxious weed herbicide application technicians can get to a particular stretch of highway to address specific noxious weed control needs. RSD staff also utilize manual control methods when it is raining or if the noxious weeds have started to seed. In these cases, RSD staff safely pull/dig any noxious weeds they encounter.

RSD has a good history of being proactive by utilizing records from previous years to check noxious weed status prior to checks performed by KCNWCP staff. Their staff prioritize site inspections depending on the time of year and weed phenology.

RSD did not identify any noxious weed sites for control by DAJD crews because of applicable restrictions in collective bargaining agreements.

Water and Land Resources Division, Stormwater Services Section

Stormwater Services Section (SWSS) has maintenance responsibilities for approximately 734 properties, totaling roughly 263 acres. Additionally, SWSS provides maintenance activities for several incorporated cities as well. Its control program for regulated noxious weeds in 2010 was very successful. SWSS controlled 95 percent of its regulated noxious weed sites in 2010. There were five tansy ragwort sites where control was not achieved.

SWSS has a strategy for controlling noxious weeds on properties falling under its jurisdiction that includes extensive use of DAJD crews. To continue its high success rate in controlling regulated noxious weeds, and to improve on control, SWSS will initiate multiple inspection and control activities in 2011. Initially, SWSS will issue lists to DAJD of its properties that have historic regulated noxious weed infestations in early spring. Crews will be instructed to check these areas and pull or dig all regulated noxious weeds. Also, during SWSS routine facility inspections, staff will also check for the presence of noxious weeds and if any are found, will schedule the facility to have the weeds controlled by either DAJD crews or a private contractor. SWSS mowing crews will also control noxious weeds if present during scheduled mowing operations. If regulated noxious weeds are reported by KCNWCP, SWSS will either have the noxious weeds controlled by DAJD crews or by private contractor. The initial attempt for control by DAJD crews will occur in May and the follow up checks will happen during the remaining spring and summer months.

Water and Land Resources Division, River and Floodplain Management Program

The River and Floodplain Management Program (RFMP) has maintenance responsibilities for over 500 identified levee and revetments and 168 floodplain parcels totaling approximately 867 acres. RFMD controlled all known regulated noxious weed sites in 2010.

RFMD uses an IPM approach for regulated noxious weed control where current weed conditions are first evaluated and then, depending on observed conditions, either manual or chemical control is selected. This approach has been very successful in prior years, and RFMD has adequately funded the necessary work.

Since RFMD does not have staff available to undertake most regulated noxious weed control efforts, it must contract for any control needs, unless noxious weed control requirements are very small and can be conducted easily during routine facility inspections. For larger noxious weed infestations that can be controlled manually, RFMD contracts with DAJD crews. In addition, regulated noxious weed sites requiring herbicide applications are contracted out to the Roads Services Division since it has staff that is licensed to do this type of work and also has the necessary equipment.

Wastewater Treatment Division

The Wastewater Treatment Division (WTD) has maintenance responsibilities for approximately 59 properties, covering approximately 299 acres. WTD was able to control all infestations to a high standard in 2010.

The Wastewater Treatment Division generally controls noxious weeds on its properties as part of routine gardening and landscaping activities. WTD's properties include two large regional treatment plants, and several smaller wastewater treatment facilities (such as pumping stations) dispersed throughout the county, generally less than one acre in area. Weeds are controlled by WTD staff or contractors, depending on the site.

Three of the WTD sites with known regulated noxious weeds are currently under maintenance agreements with onsite contractors. WTD utilizes IPM when selecting a control strategy. Depending on the plant type and amount, WTD selects from either hand pulling/digging or the application of a low toxicity systemic herbicide. WTD's dedicated staff and attention to landscaping generally results in minimal noxious weed infestations.

WTD does not anticipate any work to be specifically assigned for DAJD crews for noxious weed control, as it would not be practical or cost-effective to do so. Most weed control activities can be efficiently undertaken as part of routine landscaping activities by WTD staff, or in some cases contractors that perform other landscaping or maintenance activities on specific properties. In 2011, WTD will continue to work with KCNWCP staff as appropriate and to monitor and address infestations. Sites will be evaluated on efficacy of last year's control effort and if any noxious weeds return, they will be controlled before any seed production.

Solid Waste Division

The Solid Waste Division (SWD) has management responsibilities for 13 parcels, with a combined area of 1,389 acres. SWD had excellent regulated noxious weed control results in 2010 with no known uncontrolled sites.

SWD achieves effective weed control by utilizing an IPM approach to control the noxious weeds found on lands managed by the division. They first identify the noxious weeds and their location. Then depending on the area of infestation, weeds are either pulled or spot sprayed with an approved low toxicity herbicide. When selecting the control strategy, they also consider the growth stage of the noxious weed and time of year. As prescribed in their IPM approach, they record all noxious weed and control information to track efficacy of selected control strategy.

In SWD's evaluation of suitability for using DAJD crews, it was determined that the division had the capacity to control the regulated noxious weeds and to some extent non-regulated noxious weeds with current staffing.

To improve cost-effectiveness of regulated and unregulated noxious weed control, SWD is considering investing in better control equipment.

Metro Transit Division

The Metro Transit Division (MTD) has maintenance responsibilities for 92 facilities representing an area of approximately 357 acres. For the most part, MTD has been doing a very good job of controlling noxious weeds on its properties. Last year one tansy ragwort site was not completely controlled.

Metro Transit Division follows IPM protocols for controlling noxious weeds. The noxious weeds are first identified and their locations and amount are documented. The identified noxious weeds are then controlled by either pulling/digging, weed torch or careful application of a low toxicity systemic herbicide. This same methodology is utilized when controlling non-regulated noxious weeds. In 2011, to increase weed

control capabilities, MTD's Environmental Compliance Office will also conduct noxious weed inspection as part of the annual stormwater system inspection performed at all park-and-ride lots. Typically performed between the months of May and August, this inspection will look at all portions of the lot, not just the high visibility areas most regularly visited by the landscaping crew. If smaller infestations are noted during these inspections, they will be controlled on the spot (typically by pulling) while larger infestations and/or those requiring other control methods will be recorded and passed along to the landscape maintenance staff via MTD's work order system.

The Metro Transit Division does not anticipate any need for DAJD crews as its landscape maintenance employees efficiently control identified noxious weeds during routine maintenance activities at their Park and Ride lots, maintenance facilities and substations.

Facilities Management Division

The Facilities Management Division (FMD) has approximately 831 properties making up an area of 2,039 acres. Many of these properties (687) are under an acre in size. In 2010, all regulated noxious weed sites were controlled except for one spotted knapweed site. It appears that FMD plans to manually remove the knapweed in combination with an herbicide application to control this site in 2011.

FMD provided information shown in Appendix A which indicates that it will control the regulated noxious weeds found on its properties by utilizing IPM strategies. It also plans to contract with DAJD crews or private contractors to meet its regulated noxious weed control needs.

A Summary Analysis of Consideration of Contracts with the Department of Adult and Juvenile Detention

Several agencies' noxious weed control needs are a minor part of their overall landscaping and facility maintenance needs. Most noxious weed control needs are addressed by maintenance staff at the time of other needed maintenance activities at their various facilities. For these agencies it does not make economic sense to contract their noxious weed control work to DAJD crews.

Some agencies (Stormwater Services, River and Floodplain Management, Property Services) do not have staff available to conduct their noxious weed control activities. These agencies have used DAJD crews extensively to complete required noxious weed control work, and plan to continue utilizing these crews in the future. The only time that these agencies would not use DAJD crews is if the work requires special licensing or skills. Since DAJD crews have limited or no herbicide use experience and are currently unlicensed to perform herbicide applications, DAJD crews cannot perform this service. Additionally, if plant identification skills are required, external contracts are utilized, as DAJD crews do not have the expertise to reliably identify different species. It is the intention of these agencies to continue to use DAJD crews at levels similar to those used in the past.

The remaining five agencies (Roads, Parks, Metro Transit, Wastewater and Solid Waste) have staff to complete noxious weed control requirements. None of the needed work will be contracted out as it can be undertaken by current union-represented staff and covered under current collective bargaining agreements.

In summary, several factors limit additional regulated noxious weed control work provided by DAJD crews. They include:

- Lack of plant identification skills and expertise
- Inability to provide all of the IPM control methodologies necessary
- Inability to apply pesticides to public properties under licensing requirements
- Lack of specialized equipment
- Unable to respond to noxious weed control needs quickly in a large geographical area
- Concerns regarding safety such as doing roadside weed control work
- Cost effectiveness (agencies internal staffing levels sufficient to manage current regulated noxious weed control requirements)
- Compatibility with current collective bargaining agreements

Conclusion

County agencies with regulated noxious weed control responsibilities have been doing a very good job of controlling noxious weeds on a majority of their properties. The noxious weed control performance of county land managers has continually improved since 2003 (Figure 1). Since 2005, county agencies have generally achieved a higher control level than non-county property owners. County land

management agencies have identified in this work plan how they intend to continue improving noxious weed control outcomes on their lands.

Several agencies have very large and diverse properties where they have weed control responsibilities and in some years, control is not achieved before the end of the growing season. The agencies with the largest weed control responsibilities have identified new strategies to address the uncontrolled noxious weeds found on their properties.

The agencies that have noxious weed control work suitable for DAJD crews have hired these crews in the past and intend to do so in the foreseeable future, with modest potential for expansion. Reasons for agencies not planning to substantially expand the level of contracting noxious weed control work with DAJD crews have been outlined in this work plan.

Appendix A – Backlog of Uncontrolled Regulated Noxious Weed Sites

Land Manager	Noxious Weed	Number of Regulated Noxious Weeds Sites Present / Not Controlled (Element 1 of proviso)		Proposed 2011 Control Method (Elements 2 & 3 of proviso)			Number of Sites x Proposed Control Personnel (Element 4 of proviso)			Primary Reasons for Non DAJD Crew Use (Element 4 of proviso)	Anticipated Time of Control (Element 5 of proviso)	2011 Budget Allocation (please update 2006 data inserted for initial reference)
		Total Number of sites surveyed in 2010	Number not controlled in 2010	Manual (# of sites)	Chemical (# of sites)	Other (# of sites and method)	Agency Personnel	Private Contractor	DAJD Crew			
Parks and Recreation	Brazilian Elodea	1	1			1 - IAVMP	N/A			Grant Project	Grant Project	
	Common Hawkweed	1	0		1		1			Against bargaining agreement	May-June 2011	
	Common Reed	1	0		1		1			Noxious weed Program priority site	September-October 2011	
	Dalmatian Toadflax	3	0			1 - IPM	3			Against bargaining agreement	May-June and Aug - Sept 2011	
	Floating Primrose	1	0		1		1			Noxious weed Program priority site	August - 2011	
	Garden Loosestrife	2	2			2 - IAVMP	N/A			Grant Project	Grant Project	
	Garlic Mustard	6	0			6 - IPM	6			Against bargaining agreement	March-May and Aug-Sep 2011	
	Giant Hogweed	4	0	3	1		4			Against bargaining agreement	April-July 2011	
	Orange Hawkweed	3	2		2	1 - IPM	3			Against bargaining agreement	April-May and/or Aug 2011	
	Perennial Pepperweed	1	0			1 - IPM	1			Against bargaining agreement	April-June 2011	

	Perennial Sowthistle	1	1			1 - IPM	1			Against bargaining agreement	April-July 2011	
	Policeman's Helmet	7	1	7			7			Against bargaining agreement	April-mid July 2011	
	Purple Loosestrife	24	10	13	1	5 - IPM; 5 IAVMP	19			Against bargaining agreement	July-Aug 2011	
	Spotted Knapweed	7	1		4	3 - IPM	7			Against bargaining agreement	April-July 2011	
	Sulfur Cinquefoil	2	0	2			2			Against bargaining agreement	April-June 2011	
	Tansy Ragwort	43	3	11	23	9 - IPM	43			Against bargaining agreement	April - Oct 2011	
	Yellow Hawkweed	5	1	1	3	1 - IPM	5			Against bargaining agreement	April - June 2011	
	TOTAL	112	22									$139,000.00
Roads Services Division	Common Bugloss	0	0									
	Common Hawkweed	56	2	4	52		56			Against bargaining agreement / Mostly herbicide work	April - mid July 2011	
	Common Reed	0	0									
	Dalmatian Toadflax	3	0		3		3			Against bargaining agreement / Mostly herbicide work	April - June 2011	
	Diffuse Knapweed	18	0	2	16		18			Against bargaining agreement / Mostly herbicide work	April - June 2011 and/or fall 2011	

	European Hawkweed	2	0		2		2			Against bargaining agreement / Mostly herbicide work		
	Garden Loosestrife	0	0									
	Garlic Mustard	1	0		1		1			Against bargaining agreement / Mostly herbicide work	Best if controlled late fall to early spring.	
	Giant Hogweed	6	0		6		6			Against bargaining agreement / Mostly herbicide work	Best if controlled April - June 2011	
	Goatsrue	3	0		3		3			Against bargaining agreement / Mostly herbicide work	June - July and/or Sept 2011	
	Gorse	7	0		7		7			Against bargaining agreement / Mostly herbicide work	May-June 2011	
	Meadow Knapweed	22	0		22		22			Against bargaining agreement / Mostly herbicide work	April-July 2011	
	Milk Thistle	4	0		4		4			Against bargaining agreement / Mostly herbicide work	April-May, Sept 2011	
	Mouseear Hawkweed	1	0		1		1			Against bargaining agreement / Mostly herbicide work	April-July 2011	

	Orange Hawkweed	46	3	4	42		46			Against bargaining agreement / Mostly herbicide work	April-July 2011	
	Other Hawkweeds	6	0		6		6			Against bargaining agreement / Mostly herbicide work	April - mid July 2011	
	Perennial Pepperweed	3	0		3		3			Against bargaining agreement / Mostly herbicide work	May 2011	
	Perennial Sowthistle	3	1		3		3			Against bargaining agreement / Mostly herbicide work	June - Aug 2011	
	Policeman's Helmet	6	0		6		6			Against bargaining agreement / Mostly herbicide work	May-June 2011	
	Purple Loosestrife	34	1		34		34			Against bargaining agreement / Mostly herbicide work	June-Aug 2011	
	Rush Skeletonweed	0	0									
	Spanish Broom	1	0		1		1			Against bargaining agreement / Mostly herbicide work	July-Aug 2011	
	Spotted Knapweed	38	0		38		38			Against bargaining agreement / Mostly herbicide work	April-July and/or Sept 2011	

	Sulfur Cinquefoil	53	0		53		53			Against bargaining agreement / Mostly herbicide work	May-June 2011	
	Tansy Ragwort	1293	93	72	1221		1293			Against bargaining agreement / Mostly herbicide work	April-Sept 2011	
	Viper's Bugloss	3	0		3		3			Against bargaining agreement / Mostly herbicide work	June-July 2011	
	Yellow Hawkweed	100	0	5	95		100			Against bargaining agreement / Mostly herbicide work	April-July 2011	$115,483.
	TOTAL	1709	100									
Rivers and Floodplain Management	Dalmatian Toadflax	1	0	1			1			Single plant that was dug up in 2009, likely nothing there in 2011	June 2011	
	Garlic Mustard	1	0	1					1		April-May 2011	
	Giant Hogweed	0	0									
	Purple Loosestrife	1	0			1 IPM	1		1	Follow up treatment with herbicide	August 2011	
	Spotted Knapweed	2	0			2 IPM	2			Herbicide work/or low numbers controlled by in-house staff	May-June 2011	
	Tansy Ragwort	7	0	6		1 IPM	1		6	One may be controlled with herbicide	June-Aug 2011	
	Yellow Hawkweed	1	0		1		1			Control by herbicide	June-July 2011	

	TOTAL	13	0									$10,947.00
Solid Waste Division	Common Reed	1	0		1		1			Weed Board high priority	40756	
	Orange Hawkweed	1	0		1		1			In-house staff availability	April-May 2011	
	Rush Skeletonweed	1	0		1		1			Weed Board high priority	May-June 2011	
	Spotted Knapweed	2	0			2 - IPM	2			In-house staff availability	June-July and Sept 2011	
	Tansy Ragwort	3	0			3 - IPM	3			In-house staff availability	June-Aug and Sept 2011	
	TOTAL	8	0									$6,500.00
Wastewater Treatment	Policeman's Helmet	1	0			1 - IPM	1			Minor infestation can be controlled in-house. DAJD crew not cost effective	June-July 2011	
	Purple Loosestrife	1	0	1				1		Site under contract for other work. If weeds need to be controlled will be covered under contract.	July-Aug 2011	
	Spotted Knapweed	1	0	1			1			controlled by KCNWCP	June-July 2011	
	Tansy Ragwort	2	0	1	1		1	1		1 Site under contract for other work. If weeds need to be controlled will be covered under contract. Other site has staff gardeners that will control	June-Aug 2011	

	TOTAL	5	0									WTD does not itemize budget expenditures on weed control. Rather, it controls weeds as part of its general landscaping activities. For the four infested sites WTD controls, WTD estimates it spends about **$2,500 per year** on weed control, given that it can the can be incorporated into routine landscaping work.
Facilities Management Division	Dalmatian Toadflax	1	0			1 - IPM			1		April or May	
	Giant Hogweed	1	0			1 - IPM			1		April or May	
	Meadow Knapweed	1	0			1 - IPM			1		April or May	
	Orange Hawkweed	1	0			1 - IPM			1		April or May	
	Spotted Knapweed	3	1			3 - IPM			3		April or May	
	Tansy Ragwort	4	0			4 - IPM			4		April or May	
	TOTAL	11	1									$5,000.00
Stormwater Services	Gorse	1	0		1			1		DAJD can not apply herbicide	May 2011	
	Hairy Willowherb	1	0		1			1		DAJD can not apply herbicide		
	Policeman's Helmet	1	0		1			1		DAJD can not apply herbicide		
	Purple Loosestrife	10	0	10					10		July-Aug 2011	
	Sulfur Cinquefoil	1	0		1			1		DAJD can not apply herbicide	May 2011	
	Tansy Ragwort	77	5	77					77		May - Sept 2011	
	Yellow Hawkweed	3	0		3			3		DAJD can not apply herbicide	May 2011	

	TOTAL	94	5									$60,000.00
Metro Transit	Dalmatian Toadflax	1	0	1			1			Staff availability	June and August 2011	
	Purple Loosestrife	1	0		1		1			DAJD can not apply herbicide	June-July 2011	
	Tansy Ragwort	3	1	3			3			Staff availability	May-June 2011	
	TOTAL	5	1									$1,000.00 for regulated noxious weed control out of $80,600.00 budget for vegetation control on all facilities
KC Managed Lands Total		**1957**	**129**									

Appendix B

2010 King County Noxious Weed List

REGULATED CLASS A NOXIOUS WEEDS (Eradication required throughout Washington State including King County)	
Common Name	Scientific Name
buffalobur	*Solanum rostratum*
common crupina	*Crupina vulgaris*
cordgrass, common	*Spartina anglica*
cordgrass, dense flower	*Spartina densiflora*
cordgrass, salt meadow	*Spartina patens*
cordgrass, smooth	*Spartina alterniflora*
dyers woad	*Isatis tinctoria*
eggleaf spurge	*Euphorbia oblongata*
false brome	*Brachypodium sylvaticum*
floating primrose-willow	*Ludwigia peploides*
flowering-rush	*Butomus umbellatus*
garlic mustard	*Alliaria petiolata*
giant hogweed	*Heracleum mantegazzianum*
goatsrue	*Galega officinalis*
hawkweed, European	*Hieracium sabaudum*
hawkweed, yellow devil	*Hieracium floribundum*
hydrilla	*Hydrilla verticillata*
johnsongrass	*Sorghum halepense*
knapweed, bighead	*Centaurea macrocephala*
knapweed, Vochin	*Centaurea nigrescens*
kudzu	*Pueraria montana* var. *lobata*
meadow clary	*Salvia pratensis*
purple starthistle	*Centaurea calcitrapa*

reed sweetgrass	*Glyceria maxima*
ricefield bulrush	*Schoenoplectus mucronatus*
sage, clary	*Salvia sclarea*
sage, Mediterranean	*Salvia aethiopis*
shiny geranium	*Geranium lucidum*
silverleaf nightshade	*Solanum elaeagnifolium*
Spanish broom	*Spartium junceum*
spurge flax	*Thymelaea passerina*
Syrian bean-caper	*Zygophyllum fabago*
Texas blueweed	*Helianthus ciliaris*
thistle, Italian	*Carduus pycnocephalus*
thistle, milk	*Silybum marianum*
thistle, slenderflower	*Carduus tenuiflorus*
variable-leaf milfoil	*Myriophyllum heterophyllum*
velvetleaf	*Abutilon theophrasti*
wild four o'clock	*Mirabilis nyctaginea*

REGULATED CLASS B NOXIOUS WEEDS (control required in King County)	
Common Name	Scientific Name
Austrian fieldcress	*Rorippa austriaca*
blackgrass	*Alopecurus myosuroides*
blueweed; viper's bugloss	*Echium vulgare*
Brazilian elodea	*Egeria densa*
bugloss, annual	*Anchusa arvensis*
bugloss, common	*Anchusa officinalis*
camelthorn	*Alhagi maurorum*
common reed (non-native genotypes)	*Phragmites australis*
Dalmatian toadflax	*Linaria dalmatica* ssp. *Dalmatica*
fanwort	*Cabomba caroliniana*

gorse	*Ulex europaeus*
grass-leaved arrowhead	*Sagittaria graminea*
hawkweed oxtongue	*Picris hieracioides*
hawkweed, mouseear	*Hieracium pilosella*
hawkweed, orange	*Hieracium aurantiacum*
hawkweed, polar	*Hieracium atratum*
hawkweed, queen-devil	*Hieracium glomeratum*
hawkweed, smooth	*Hieracium laevigatum*
hawkweed, yellow	*Hieracium caespitosum*
hoary alyssum	*Berteroa incana*
indigobush	*Amora fruticosa*
knapweed, black	*Centaurea nigra*
knapweed, brown	*Centaurea jacea*
knapweed, diffuse	*Centaurea diffusa*
knapweed, meadow	*Centaurea jacea x nigra*
knapweed, Russian	*Acroptilon repens*
knapweed, spotted	*Centaurea stoebe*
kochia	*Kochia scoparia*
lepyrodiclis	*Lepyrodiclis holosteoides*
longspine sandbur	*Cenchrus longispinus*
loosestrife, garden	*Lysimachia vulgaris*
loosestrife, purple	*Lythrum salicaria*
parrotfeather	*Myriophyllum aquaticum*
perennial pepperweed	*Lepidium latifolium*
perennial sowthistle	*Sonchus arvensis* ssp. *Arvensis*
policeman's helmet	*Impatiens glandulifera*
rush skeletonweed	*Chondrilla juncea*
saltcedar	*Tamarix ramosissima*
spurge, leafy	*Euphorbia esula*
sulfur cinquefoil	*Potentilla recta*

swainsonpea	*Sphaerophysa salsula*
tansy ragwort	*Senecio jacobaea*
thistle, musk	*Carduus nutans*
thistle, plumeless	*Carduus acanthoides*
thistle, Scotch	*Onopordum acanthium*
water primrose	*Ludwigia hexapetala*
white bryony	*Bryonia alba*
wild chervil	*Anthriscus sylvestris*
yellow floating heart	*Nymphoides peltata*
yellow nutsedge	*Cyperus esculentus*
yellow starthistle	*Centaurea solstitialis*

REGULATED CLASS C NOXIOUS WEEDS (control required in King County)	
Common Name	Scientific Name
absinth wormwood	*Artemisia absinthium*
hairy willowherb	*Epilobium hirsutum*
hawkweed, common	*Hieracium lachenalii*
hawkweeds, non-native and invasive	*Hieracium* spp