



Application

128462 - AGR HB821 Invasive Woody Tree Management 2023 - Final Application

128790 - A comprehensive plan for eradicating buckthorn from Billings' residences, business establishments, parks and public lands.

AGR Noxious Weed Trust Fund

Status:	Awarded	Original Submitted Date:	07/05/2023 8:44 AM	Submitted By:	Steven P McConnell
		Last Submitted Date:	09/05/2023 9:29 AM	Last Submitted By:	Steven P McConnell

Applicant Information

Primary Contact:

Name:	Dr.	Steven	P	McConnell
	Salutation	First Name	Middle Name	Last Name

Title:  
Email: mconnells@billingsmt.gov

Alternate Email: smc571@msn.com

Address: 4848 Midland Road  
smc571@msn.com

*	Billings	Montana	59101
	City	State/Province	Postal Code/Zip

Phone: 406-237-6227  
Phone: ###-###-#### Ext.

Alternate Phone: 509-868-8277

Fax:

Comments:

Organization Information

Name: Billings, City of

Organization Type: City Government

Organization Website:

Address: 210 N. 27th Street

*	Billings	Montana	59101
	City	State/Province	Postal Code/Zip

Phone: 406-247-8637

Ext.

Alternate Phone

Fax:

Email address

Alternate Email

**Comments:****Vendor ID****Project Information**

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*Provide a couple of sentences that describe your proposal to the Advisory Council as an introduction to the project.*

**Brief Project Description:\*** Our aim is to eradicate buckthorn from the entire city. We will begin with an extensive public information program that will begin this summer (2023). Then we (the Parks and Recreation Department) will coordinate with the Code Enforcement Department to contact owners and provide resources to them to remove buckthorn from their property.

350 characters max.

**Funding Need:\***

*Identify specific tasks, outlined in Appendix A of the State Weed Management Plan, attained by this project. How does this project assist the state in accomplishing Coordination, Prevention, Detection, Rapid Response, or Control goals?*

There are 5 pillars to the State's Weed Management Plan COORDINATION, PREVENTION, DETECTION, RAPID RESPONSE and CONTROL. All of these are integral to our proposed plan to eradicate buckthorn from the City of Billings, prevent its return and, we hope, influence surrounding areas to learn from our example and eradicate buckthorn where they have it and prevent its establishment where they do not.

Our proposal is simple and has two parts to it. First the City of Billings Parks and Recreation Department will continue their aggressive campaign of eliminating buckthorn from the park in which it is well-established and eradicate and prevent its establishment, respectively, in parks with minor populations or no buckthorn at all.

The new feature we are adding is that control will extend to private property this fall (2023). A review of existing code determined that the city has the legal authority to require property owners remove buckthorn from their property. Before this authority is exerted, a large-scale, pro-active and determined public relations campaign will be conducted to inform citizens about what buckthorn is and why it is a problem environmentally, ecologically and culturally.

The control operation will be implemented by having the Code Enforcement and Parks and Recreation Departments work together. The public relations campaign will provide property owners the skills they need to identify buckthorn and determine if they have it on their property. We will also rely on a motivated citizenry to watch for and report where they see buckthorn as they go about town. Once we have a reliable report that buckthorn is present, whether self-reported or reported by a passerby, Code Enforcement will contact the landowner to notify them of a violation of City Code and provide them information about how to remove it and notify them that it is a legal requirement that it be removed.

The feature that we think will make this program successful for removing buckthorn across private property is our plan to provide landowner assistance in removing buckthorn. Help to property owners will at a minimum include, providing herbicide and loaning tools to effect control. Tools that may be loaned include uprooters used to pull up small to medium-sized buckthorn plants by the roots and pruning saws that can be used to cut stems of larger plants near ground-level prior to applying herbicide to the stem. For landowners adverse to or unable to control buckthorn themselves, we will provide a skilled technician to do this work for them, as funding allows.

This plan includes all the key elements of the State's Weed Management Plan. It has COORDINATION amongst City Departments. It is focused on PREVENTION through outreach. DETECTION, RAPID RESPONSE and CONTROL are the essential elements that tie the program together that will end in a buckthorn-free municipality.

3000 character limit

**Organizational Capacity:\***

*Describe how the group is organized and their experience (who is managing grant, who is doing the work), how are participants receiving information and education, what type of outreach was/or is being done, and which, if any, alternative funding sources are being used for this effort?*

The primary entities in this project are the Code Enforcement Department led by Division Manager Tina Hoeger, and Steve McConnell, City Forester in the Forestry Division of the Parks and Recreation Department. Tina has supervisory authority over a dozen Code Enforcement Officers and, as a former police officer, is highly experienced in explaining and enforcing the law to a lay public. As a supervisor she is skilled at motivating her staff and creating an organized structure to their work that will result in effective followthrough on control efforts and tracking that will ensure that areas within the city where buckthorn may be present will not be missed.

Steve McConnell is a former Extension Forester and is highly skilled at creating effective presentations to communicate information to lay audiences. Much of his work in the past was focused on disease and insect problems in forest trees and the problems with, identification of, and means to control buckthorn are similar to this past work. Steve has also been heavily engaged in controlling buckthorn for the past three years, obtaining grant funding from a Project Development Grant with the DNRC several years ago to effect control on a one-acre plot to test control methods and learn what is involved in followup work on plants that resprouted, and new emergents that result from the seed bank buckthorn stores on the forest

floor, seeds of which remain viable for up to 5 years. Two years ago, Steve organized and managed a masticating operation that involved two masticators that cleared 30 acres over the course of 4 1/2 days.

Both Tina and Steve are supported by other entities interested in buckthorn control and providing high quality information to the public. In particular, the Yellowstone County Weed District has been an integral partner. They have provided recommendations on appropriate herbicides and on occasion loaned tools with which to apply them. They have experimented with foliar control techniques and shared information with us on the relative success in achieving control. Most importantly, they have an education specialist that routinely makes presentations about invasive plants and they have organized and led an "Invasive Plant Symposium" in Billings for the past few years.

Billings also has a Public Information Officer that will help provide information to the public about buckthorn and City efforts to effect its control.

Funding that will be used to support this project is the City and County match of salaries for the individuals involved - Code Enforcement Officers and its Division Manager, the City Forester and the Public Information Officer and County support provided by salary for services provided by their Crew Foreman / Education Specialist. We anticipate doing public presentations at the Public Library and possibly other City-owned facilities and we will make and distribute Public Service Announcements (PSAs) to local television and radio outlets.

3000 Character Limit

#### Project Goals:\*

List both short- and long-term goals for this project: Short-term (1-3yrs), Long-term (4-10yrs).

Short-term goals:

- 1) A successful Outreach and Education Program that achieves near-universal awareness of buckthorn's presence in Billings and understanding that it is a problem and must be eradicated from wherever it is found,
- 2) A buckthorn control program that results in buckthorn across all ownership types being found, treated and effectively controlled,
- 3) Greater appreciation by Billings' citizens of actions Code Enforcement takes to create a better, more livable community including pro-active measures to support ecological integrity and save Billings from costly future control measures by eliminating the source of spread before it can become a significant problem
- 4) Greater appreciation for the Division of Forestry for their attention to ecological problems in Natural Areas, in parks and across the city as a whole,
- 5) Greater appreciation by Billings citizens and elected officials of the collaborative work amongst City Departments to effect buckthorn control across property boundaries and the collaborative work done to protect ecological integrity and effect significant cost savings and solving a potentially large and expensive problem while still a small, manageable and relatively inexpensive

The long-term goals are essentially the same as for short-term except that we hope that:

- 1) Billings residents will gain a greater appreciation for natural areas and better understand their importance as a place to learn about the natural world and their value as early indicators of changes to ecological systems that could be consequential to city residents,
- 2) Billings residents will better appreciate the role Code Enforcement plays in effecting positive change in Billings and maintaining a high quality of life

3000 Character Limit

How many years (1-3) will it take to expend all funds?

**Length of Project:** 3

Attach a project map with boundaries and weed infestations using any mapping resource.

**Project Detail Map:\*** [RFI\\_0242\\_Billings\\_City\\_Limits2023.pdf](#)  
Click here to add attachment.

Click on [Help](#) for information on how to use the <http://mtnhp.org/mapviewer> website to find the center Latitude and Longitude of your project.

**Center location of the project in Decimal Degrees, WGS84 or NAD83:\***

45.78887	-108.5533
Latitude (##.####)	Longitude (-###.####)

## Project Cooperators

Cooperator Type	Cooperator	Cooperator Commitment
City	City of Billings Code Enforcement	Receiving Grant Funds
County Weed District	Yellowstone County Weed District	Support Only

## Integrated Weed Management Tools

Row	Planned?	Describe Use
Prevention (washing equipment, using weed seed free products, limiting disturbance, etc.):	Yes	Where possible, we will pull buckthorn up by the roots to remove it from the site. To the extent we can, we will attempt to remove mature seeds from the site as we remove buckthorn from the site.
Biocontrol Control (classic use of biocontrol agents):	No	We are not aware of any biocontrol agents that are effective on buckthorn.
Cultural Control (targeted grazing, tilling, hand pulling, burning, fertilization, revegetation, etc.):	Yes	Hand pulling is one of several approaches we will use to remove buckthorn. We have no plans to graze, till, burn or fertilize. We will definitely encourage revegetating the area, in part so as to exclude buckthorn from returning in the future.
Chemical Control (list anything not in herbicide worksheet):	Yes	See herbicide worksheet.
Other (other methods being used):	Yes	Herbicide use (mainly hack and squirt but also foliar spray) and pulling by hand or with "uprooters" are the methods we will use to remove buckthorn.

## Additional IWM Information

### Additional IWM Information

If necessary, please describe any additional integrated weed management techniques being used, or expand on the selections in the table above.

Already described. Very basic. Herbicide use (hack and squirt) and pulling, using hands or an uprooter. Foliar spray will be used when there are an abundance of very small buckthorn emergents and a landowner can track the effectiveness of the treatment and take action if plants were missed or the treatment was for some reason ineffective.

2,000 character max.

## Monitoring Plan

### Annual Monitoring Plan:\*

Monitoring is **required** and should include, at minimum, before and one-year after treatment data. MDA staff is available to help with pre- and post-treatment monitoring based on state standards if requested.

Describe the monitoring plan for tracking the activities of this project. Explain how participants will determine the effectiveness of their noxious weed management from year to year. Include how often sites are visited and/or treated, non-target damage and effective treatments are evaluated, and how changes in native vegetation or site characteristics are being determined.

Residents from whose property buckthorn are removed will be required to report on the effectiveness of the treatment for three years following treatment. Where sprouting occurs or emergents develop from seeds left in soil, follow-up treatment will be required. Residential areas in Billings are early in the infestation cycle and where plants occur, they are usually single plants or in very small groups making removal and post-removal monitoring easy. Residents will be asked to send photographs of the affected area to the Forestry Department. The City Forester will check photos for indications of re-establishing buckthorn and will randomly inspect at least 10% of the properties treated to make sure that buckthorn is not re-establishing at treated sites. Revegetating sites with pollinators and native plants will be encouraged and we will work with MSU Extension to provide service to clients including information on what plants would do well on their site.

2000 character max.

### Mapping Methods:\*

Participants are **required** to use or share mapping data from each project with EDDMapS. The Department of Agriculture utilizes the Early Detection and Distribution Mapping System (EDDMapS) to foster public noxious weed data sharing in all areas of the state. For information on sharing data click the link: <https://www.eddmaps.org/tools/>.

Describe the methods used to map noxious weed infestations in the project area.

We will work with the City GIS Department to identify a location for each site - the specific address and coordinates - of each house treated and assemble that on to a map that can be shared between

interested entities. We have done this in the past. Several years ago we found and treated buckthorn at 7 parks around town and we identified those and listed them in a table and provided a map of their locations. The City of Billings Planning Department Base Map I use routinely in my work provides both street address and long-lat information, literally, at the click of a mouse.

2000 character max.

**2023-Reporting Period 1: Planned Project Activities/Objectives and Educational Events (Aug. to Dec.)**

Time Period	Activity Description
August, September, October, November, December	An active public information campaign will occur. Other likely partner agencies will be educated about buckthorn and provided resource materials. A means of loaning tools and tracking locations will be devised.

**2024- Reporting Period 2: Planned Project Activities/Objectives and Educational Events (Jan. to Dec.)**

Time Period	Activity Description
January, February, March, April, May, June, July, August, September, October, November, December	Public education will continue. Landowners will be contacted and directed to effect control. Tools will be made available to effect control. A database of contact and treatment will be maintained and reports written.

**2025- Reporting Period 3: Planned Project Activities/Objectives and Educational Events (Jan. to Oct.)**

Time Period	Activity Description
January, February, March, April, May, June, July, August, September, October, November, December	Same as for 2024.

**Herbicide**

Herbicide 1	
Active Ingredients*	Triclopyr Ester
Application Rate*	432
Herbicide Cost*	\$155.00
Does your Herbicide cost differ from MT State price list?*	No
If Yes, explain cost difference	
Herbicide Additive	Basal Bark Oil
Additive Cost	\$73.00
Application Type*	Landowner Applied
Weeds Treated*	Common Buckthorn
Acres Treated*	6.0
Total Amount	\$1,368.00

**Totals**

Total Acres Treated: 6.0  
 Total Herbicide Project Cost: \$1,368.00

**Revegetation - Commercial Applicator**

Seed Mixture Description	Pounds per Acre	Seed Cost per Acre	Application Type	Acres Reseeded	Total Amount
Kentucky blue grass seed, blue ribbon mix	200.0	\$750.00	Landowner Applied	1.35	\$1,012.50
				1.35	\$1,012.50

**Seed Labels:**

Attach seed label or equivalent document.

[Click here to add attachment.](#)

**Totals**

Total Acres Reseeded: 1.35  
 Total Revegetation Project Cost: \$1,012.50

**Budget**

Expense Category	Expenditures	Narrative
Administration - accounting, indirects, grant management, etc.	\$0.00	Everyone involved in administration is a city employee
Salary	\$0.00	City employee salaries are paid by the city
Benefits	\$0.00	Benefits are paid by the city
Contracted Services- labor (herbicide/revveg), mapping, etc.	\$21,119.50	Contractors to remove buckthorn
Supplies & Materials (non-herbicide/revveg)	\$500.00	Uprooters, shovels, saws, loppers, pruners, mixing containers
Communications	\$500.00	Advertising and promotions
Travel	\$0.00	Possible travel to a conference
Other Expenses	\$500.00	Incidentals
Totals	\$22,619.50	

**Herbicide Costs**

Expense Category	Total
Herbicide	\$1,368.00

**Revegetation Costs**

Expense Category	Total
Revegetation	\$1,012.50

**Total Budget**

Totals	Total Grant Funds
Total Budget	\$25,000.00

**Other Attachments**

File Name	Description	File Size
To whom it may concern.docx (17 KB)	Additional information relevant to this grant application, in particular a better explanation of "Local Cooperative" and "Educational" aspects of this proposal.	17 KB

**General Vegetation**

**Environmental Summary Report Zip Folder:**\* [City of Billings Buckthorn Project EA Summary.xlsx](#)  
Click here to add attachment.

**Impact/Risk**

Will any proposed project activities result in:	None	Minor	Potentially Significant	Can it be mitigated?
a. Changes to the diversity, productivity or abundance of plant species (including trees, shrubs, forbs and grasses)?		Yes		Yes
b. Adverse effects on any non-target plants?	Yes			Yes
c. Any other likely impacts not addressed above?	Yes			Yes

**Mitigation**

List vulnerable plant species in the area and describe mitigation strategies for any minor or potentially significant impacts. Mitigation may include creating a buffer, spot spraying instead of broadcasting, etc..\*

We plan to treat individual plants, remove them either by killing the stump with an herbicide applied to each treated stem or by uprooting the plant and removing it, roots and all. After removal, we recommend that revegetation occur. We will provide grass seed so that the area can at least be re-occupied by grass. Many of the areas in which buckthorn is found on private property are in cool, dark, moist areas in relatively remote parts of gardens or under other brush. In some of these areas there is no need to replace buckthorn as it is encroaching into an already established garden area. In other areas, replacing with garden plants - annual, perennial or shrubs may be desirable.

Because buckthorn seeds remain viable in the soil for at least several years, follow-up monitoring and selective removal of emergents will need to occur. Buckthorn can establish and grow in dense shade so an overstory of other plants cannot be relied upon to control buckthorn emergents.

Update 8-18-23: the change in vegetation that will occur as a result of this project will be positive. Buckthorn will be removed either directly by uprooting plants, roots and all, or cutting stems at or near ground level and treating with a herbicide to kill roots. Buckthorn may be replaced by: 1) grass that we will apply as seeds in areas left without vegetation following buckthorn removal, 2) flowers or forbs that we or homeowners will add as either seeds or as emergent starts purchased from a local nursery, or 3) shrubs purchased from a local nursery that can functionally replace buckthorn and occupy the site and making it unavailable for buckthorn to re-establish (making sure to remove emergents that may establish from residual seeds).

Because removal is targeted at individual plants we do not expect adverse effects on non-target plants other than a very occasional circumstance in which the roots of a non-target plant are completely entangled with a buckthorn plant and effective removal of the buckthorn can only be accomplished by removing both plants.

10,000 character max

**Soils, and Ground & Surface Water**

**Soils Data Maps**

**Soil Data Maps:** [Wind Erodibility.pdf](#)  
Click on the above icon to attach a file.

**Surface Water Map:** [Water Bodies EA Area.pdf](#)  
Click on the above icon to attach a file.

**Potential Risk**

Active Ingredients	Runoff	Leaching	Drift	Toxic to Aquatic Life	Surface Water Restrictions
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**Active Ingredients - Other**

I don't see the "Add" button for the Potential Risk section so I am adding that here.

We'll be using Remedy ultra mixed with 'Brewer basal area.' The active ingredient is triclopyr: 3.5.6-trichloro-2-pyridinyloxyacetic acid, butocyethyl ester....60.45%. Possible environmental hazards at that "this pesticide is toxic to fish." It should also not be applied directly to water and in areas where soils are permeable, particularly where the water table is shallow as use in these areas may result in groundwater contamination. We will follow label directions and ensure such outcomes do not occur.

1,000 character max.

**Herbicide Label:**

Click on the above icon to attach a file.

**Project Description**

Does the proposed project contain:	Soil Erosion	Soil Compaction	Shallow Groundwater	Surface Water	Wells
Project Site Description:			Yes	Yes	Yes

**Mitigation**

**Soils and Water: Describe mitigation strategies (use herbicide labels) for any minor and potentially significant impacts, as well as any additional impacts not addressed in the tables:\***

When herbicides are used on occasions that uprooting plants is not practical, the herbicide used (remedy ultra with a basal oil surfactant) will be applied directly to cut stumps. According to the label there is some potential for chemicals to show up in ground water and the chemical can be harmful to fish. We are under the impression that the limited extent to which we will use herbicides is unlikely to cause any problems to ground water or provide any pathway by which it could reach and have an effect on fish. We will look into this much more comprehensively so that we can be sure of this if a grant award is offered so that we can be certain that there will be no adverse effects and so that we can know exactly what precautions we will need to take to be certain of no effects to non-target organisms.

We do not know the location of wells in Billings but we do know that there are resources available to help us locate these so that we can ensure we maintain a proper distance from them.

We have an excellent working relationship with the City GIS Program and they have excellent databases available to them, including shallow groundwater and surface water that they can make available to us at whatever scale we need to do effective work.

10,000 character max

**Wildlife Habitat and TES Species**

**Impact/Risk (Fish & Wildlife Habitat)**

Will any proposed project activities result in:	None	Minor	Potentially Significant	Can it be mitigated?
a. Alterations of critical fish or wildlife habitat?	Yes			N/A
b. Changes in the diversity or abundance of game animals or bird species?	Yes			N/A
c. Changes in the diversity or abundance of non-game species?	Yes			N/A
d. Targeted grazing in areas associated with bighorn sheep or predators?	Yes			N/A
4e. Any other likely impacts not addressed above?		Yes		N/A

**Impact/Risk (Threatened, Endangered, and Montana Species of Concern)**

Will any proposed project activities result in:	None	Minor	Potentially Significant	Can it be mitigated?
a. Alterations of critical habitat for TES species?	Yes			N/A
b. Adverse effects on any TES species?	Yes			N/A
c. Any other likely impacts not addressed above?	Yes			N/A

**Mitigation**

**Fish and Wildlife Habitat, Threatened, Endangered, Montana Species of Concern: Describe mitigation strategies for any minor or potentially significant impacts, as well as any additional impacts not addressed in the tables:\***

The buckthorn in Riverfront Park is so thick that it inevitably provides some hiding cover for white-tail deer which are abundant in the area. Last year (2022) about 30 acres of the park were cleared in a mastication project. Deer are still abundant in the project area which does not "prove" that they were unaffected but does indicate that they are able to manage the change that eliminating a dense cover of invasive species and restoring the area to natural conditions provides. Similarly, Riverfront Park is a popular and well-used birding area and is listed as a "birding hotspot" by the Yellowstone Valley Audubon Society. Prior to masticating in 2022, all common neotropical migrant birds were abundant. In 2023, all bird species that had been present in 2022 were still present. None of the previously common birds failed to return. Over time, birders have built an extensive list of birds seen there, some occurring infrequently or rarely and it is not possible to know if work done to restore the site to its original flora and eliminating invasive plant species has affected rare occurrences in any way.

Buckthorn presence in parks, residences and business establishments is at a much smaller scale, often consisting of only a single plant or a small patch. These patches had no real wildlife value and the eradication of buckthorn from these locales will have no consequential effect on wildlife.

Update on 8-17-23

Buckthorn is distributed by fauna, mainly avifauna who transport it by eating berries and then defecating or vomiting them out. Buckthorn berries are large, colorful and probably appear to fauna to have value as a food source, especially in the winter when berries are still on bushes and other food sources are buried under snow. In fact, buckthorn has a strong purgative effect on fauna and berries are probably a negative energetically as not only do fauna get little or no food value from eating buckthorn berries, they lose whatever other food they may have had in their stomachs. This distribution mechanism is highly efficient and buckthorn is one of the only invasive plants, and the only one present in this area, that spreads exclusively by seed. Removing buckthorn will remove the source of spread.

10,000 character max

**Air Quality**

**Impact/Risk**

Will any proposed project activities result in:	None	Minor	Potentially Significant	Can it be mitigated?
a. Emission of air pollutants or deterioration of ambient air quality?	Yes			N/A
b. Creation of objectionable odors?	Yes			N/A
c. Adverse effects on non-target plants due to drift?	Yes			N/A
d. Any other likely impacts not addressed above?	Yes			N/A

**Mitigation**

**Describe mitigation strategies for any minor or potentially significant impacts, as well as any additional impacts not addressed in the table.\***

I can't think of any effects to air quality that may result from this proposed work.

10,000 character max

**Historical and Archaeological Sites**

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**Impacts/Risk**

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Will the proposed project impact any historical and/or archeological sites? \*  No

Describe mitigation strategies:

I do not think we will be working in known historical or archeological sites. If there is work, the effect of our work would most likely be positive as we would eradicate unwanted invasive vegetation from adjacent to them, possibly preventing damage to monuments or structures that should be protected.

10,000 character max

**Historical Site Letter**

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Click on the icon to add the attachment.

Montana Historical Society Letter\* [Historic and Archaeological.docx](#)  
Click here to add attachment.

**NWTF Environmental Assessment Reviewer Form**

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MDA Reviewer - Area of Concern	Reviewer Name	Potential Impact on Environment	Initial Review of Mitigation	Notes on Mitigation Statement	Approved
General Vegetation Type	JC	Minor	Meets Minimum Mitigation	Within city limits in residential area	Yes
Surface & Groundwater	JC	Minor	Meets Minimum Mitigation	Within city limits in residential area	Yes
Soils	JC	Minor	Meets Minimum Mitigation	Within city limits in residential area	Yes
Threatened & Endangered Species	JC	None	Meets Minimum Mitigation	Within city limits in residential area	Yes
Fish & Wildlife Habitat	JC	Minor	Meets Minimum Mitigation	Within city limits in residential area	Yes
Air Quality	JC	None	Meets Minimum Mitigation	No long term effects to air quality	Yes
Historical & Archeological Sites	JC	None	Good		Yes

**MDA Internal Documents**

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**EA- Document Checklist**

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**Document Checklist**

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Required Documents	
Project Map (Project Overview Form)	Yes

EA Summary Report (zip or both PDF & EXCEL files)	Yes
Soil Maps (Ksat, KFactor, Wind Erodibility Group, pH, Depth to Water Table)	Yes
Surface Water Map (all water bodies labeled)	Yes
A 50-foot buffer (no spray zone) will be given to all well regardless of depth.	Yes
Letter from the Montana Historical Society or Cultural Records office	Yes
Photo(s) of the problem (optional)	Yes