

Preparation of Drainage Applications

D2 Operating Procedures Updates

Housekeeping



- Webinar is being recorded and will be available on the 007 website.
- Hosting a Question & Answer session at the end of this webinar.
 - If you have a question, please type it into the chat panel.

Chronological History of the D2

- March 2017 - 1st version of the D2
- June 2021 – 1st major edit
- March 2022 – 2nd major edit
- November 2022 – another minor edit



PREPARATION OF DRAINAGE APPLICATIONS

Operating Procedure D2
For Qualified Persons and WSA staff

Water Security Agency

Revised March 2022

Updates

- 1.1 Client Contacts QP
- 1.2 Client Contacts WSA Approvals Directly
- **2.0 QP contacts WSA Prior to Doing any Work on a Drainage Project to Discuss Project Scope**
- 2.1 WSA Team
- 3.3 Site visit – Conservation groups
- 3.5 On-Site Inspection – Bio-security
- 3.6.4 Channel Disturbance (Channel Clearing vs Channelization)
 - Channel Disturbance - Impact Mitigation Supplemental Report
 - Habitat Risk – Updates to Risk Framework
- 3.7 Term Lengths
- 3.8 Design of mitigation requirements
- 3.8.2 Adequate Outlet
- 3.9 Legal Parcels – Updating ISC data, Section 3.1 and 3.2 table
- 3.10 Arrange Land control – Easements
- 3.11 Complete Draft Application form

1.1 Client Contacts the QP: QP collects info



Intake Form for Drainage Applicant

Applicant Name:		
Phone Number:		
Email:		
Legal location of works:		
Type of drainage works:	☐ Surface drainage ☐ Tile drainage ☐ Channelization ☐ Wetland infilling ☐ Berm (Dam) ☐ Pumping	
Permanency of works:	☐ Temporary ☐ Ongoing (permanent)	
Status of works:	☐ Existing ☐ Proposed	
Extent of drainage works:	☐ Works on one quarter ☐ Works across more than one quarter	
Size of drainage works:		Acres Quarters
Legal land location of point of adequate outlet:		
Working relationship with neighbours:	☐ Relationships are good ☐ Conflicts Notes:	
Drainage works impacting neighbouring lands?	☐ Yes ☐ No Notes:	
Are the works part of a C & D?	☐ Yes ☐ No ☐ Working with C&D Notes:	
Is RM aware of drainage works:	☐ Yes ☐ No Notes:	
Additional info:		

1.1 Client Contacts the QP: QP shares info



Information QP Shares with Client/Applicant

- Drainage approvals are required for all drainage works
- WSA approves drainage works using the network approach
- The QP will need to talk to all landowners involved
- WSA considers potential cumulative impacts of drainage project, including: water quantity, water quality, and habitat and depending on risks they each will need to be properly mitigated
- Mitigation requirements will need to be built/followed
 - Flow controls, erosion controls, AHP review, timing
- Drainage projects are
- Written land control is required for all individuals involved
- There are different types of land control including:
 - ☐ Joint applicant ☐ Registered easement ☐ Written
- Applicant may need to hire additional expertise to get drainage works designed/approved e.g., legal, engineer, heritage resources
- There are a number of funding programs through WSA or Ministry of Agriculture that applicant may qualify for
- Drainage works take time to get approved
 - 18months to 2yrs is reasonable
- ISC fees will be charged to all landowners who are joint applicants
- Once approved a notice of drainage approval will be registered on land titles involved in project

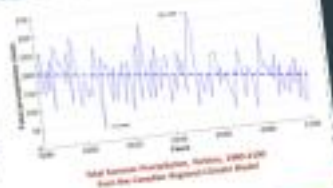
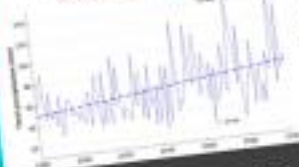
Common Question???

What do you need to tell the other landowners?



It is IMPERATIVE that your QP provides ALL other landowners to your network a complete, finalized application with all maps before they sign. If not, YOUR APPLICATION may not stand valid if challenged.

Two Model Projections, Future 100 and 200 Year Return Periods (Simulated)



Two Model Projections, Future 100 and 200 Year Return Periods (Simulated)

What happens if we have more variability and more events- how does it relate to my drainage system?

Common Question???

How should I ask for land control? I can see it might not be easy.

- It can be difficult
- Communicate early
- Use your QP's help



Considering an agricultural drainage project?

AgH2Onward
answers your
Common
Questions
Direct them to
AgH2Onward.ca
to find out more

1.2 Client Contacts WSA Approvals Directly

- WSA Tech will:
 - Gather client intake info
 - Counsel the client on the drainage approval process
- Same as Section 1.1
- WSA Tech may work with the client/applicant to create an initial project boundary
- If project is an RFA, WSA Tech will work with WSA Compliance Tech involved
- WSA Tech will direct the client to the List of QPs on WSA's website

Client



List of QPs

List of Qualified Persons who have completed the Water Security Agency's QP Administrative Training Course

City/Town where QP is based	Region of the province	QP Area(s) of Practice	Name	Contact	Company	Type of Qualified Person	Professional Designation
Pilot Mound, MB	Anywhere in Saskatchewan	Communication, Administration, Project Management, Project Development, (User's interest is in the drainage projects.)	Julie Artuckle	Work: 204-245-0280 Email: julie@skysat.com	Skysat Geo Services Ltd.	Accredited Qualified Person	
Hazleton	Anywhere in Saskatchewan	Communication, Administration, Project Management, Project Development, Intermediate Technical, Basic Technical	Julie MacKenzie	Work: 306-264-7747 Email: jmackenzie@gmail.com	M-Owen C Land and Cattle Co. Ltd.	Self Designated Qualified Person	Professional Agriologist (P.Ag.)
Marmouille	Anywhere in Saskatchewan	Communication, Administration, Project Management, Project Development, Basic Technical, Intermediate Technical, Will liaise with On Point Consulting's professional engineer to deliver engineering design.	Clinton Thueberger	Work: 306-525-6472 Email: clinton@onpointconsulting.ca	On Point Consulting Inc.	Self Designated Qualified Person	Applied Science Technologist (A.Sc.T.)
		Communication, Administration,					

2.0 QP contacts WSA Prior to Doing any Work on a Drainage Project to Discuss Project Scope



- Once QP has confirmed applicant is to work with them, they must contact WSA to determine which WSA Tech to work with

The QP should discuss high-level review of project scope with a WSA Tech prior to:

- **Delineating the network boundary**
- **Obtaining a Provincial Drainage Number**

Things to discuss with WSA Tech when conducting a high-level review of project scope

- Location of project
- Approximate size of project
- Likely location of point of adequate outlet
- Early identification of mitigation concerns
- Other items to address include:
 - Heritage review
 - Types of landowners involved - lands owned by RMs, FNs, MOHI, railways
 - Duty to Consult requirements
- File history
- Expected timeline
- QP Competencies

2.0 QP contacts WSA Prior to Doing any Work on a Project to Discuss Project Scope

- QPs are restricted to conducting work within their scope of practice, based on their core skills and competencies.
- Not all QPs will be able to conduct all functions listed within each area of practice. If the QP does not have the required competencies, they should look to partner with another QP who they can sub-contract for these services.

Competency	Function	Professional Designations who may perform this function
Communication	• Communicates timelines and expectations to landowners. • Facilitates communication between landowners. • Liaises with WSA on behalf of landowners.	Applied Science Technologists (A.Sc.T.), Agrologist, Professional Engineer (P.Eng.), Professional Geoscientist (P.Geo.), or other individuals as accredited by WSA.
Administration	• Fills out the Application for Drainage Works Approval. • Prepares reports and documents as necessary, and reviews them to ensure accuracy, clarity, and completeness.	A.Sc.T., Agrologist, P.Eng., P.Geo., or other individuals as accredited by WSA
Project Management	• Manages the application process including resources and timelines for a successful application.	A.Sc.T., Agrologist, P.Eng., P.Geo., or other individuals as accredited by WSA
Project Development	• Assists landowners to evaluate options for making a drainage application. • Assists landowners through the process of project development where required including conceptual, preliminary, and detailed design.	A.Sc.T., Agrologist, P.Eng., P.Geo., or other individuals as accredited by WSA
Basic Technical	• Prepares plans showing drainage works and wetlands. • Identifies land with/ impacted by drainage works. • Determines the initial point of adequate outlet for submission to WSA. • Determines project risk and likely mitigation requirements.	A.Sc.T., Agrologist, P.Eng., P.Geo., or other individuals as accredited by WSA
Intermediate Technical	• Designs low risk mitigation works beyond a standard design. • Sizing of infrastructure (e.g., culverts)	A.Sc.T., Agrologist, P.Eng., P.Geo.
Engineering Design	• Designs higher risk mitigation works. • Designs projects with a high dollar value. • Designs projects with a high level of technical complexity	A.Sc.T., P.Eng.

2.0 QP contacts WSA Prior to Doing any Work on a Drainage Project to Discuss Project Scope

- **WSA expects:**
 1. QP to work with assigned WSA Tech throughout the drainage approval process
 2. Communication between WSA Tech and QP will happen in a timely manner.



2.1 WSA Team



- WSA's Approvals Techs will provide a project management and a regulatory coordination role for government activities on each file.
 - All drainage requests, submissions, and communications relating to government services and specialists will be routed through the WSA Tech.
- AHP Specialists
- SAR Specialists
- Hydrology
- The QP will work with the WSA Tech throughout the process and the Tech will contact WSA's internal specialists for advice.

3.0 Prepare Draft Application

3.3 Site visit and meet with applicants

Added info on conservation groups

- Conservation groups are likely to ask a lot of questions to clarify exactly what the project impacts are to their lands and what they may be asked to sign off on.
- Many conservation lands have complex funding agreements which may limit the conservation group's ability to provide land control on these lands. They need to know exactly what is being asked of them to ensure they are not breaking these funding agreements.

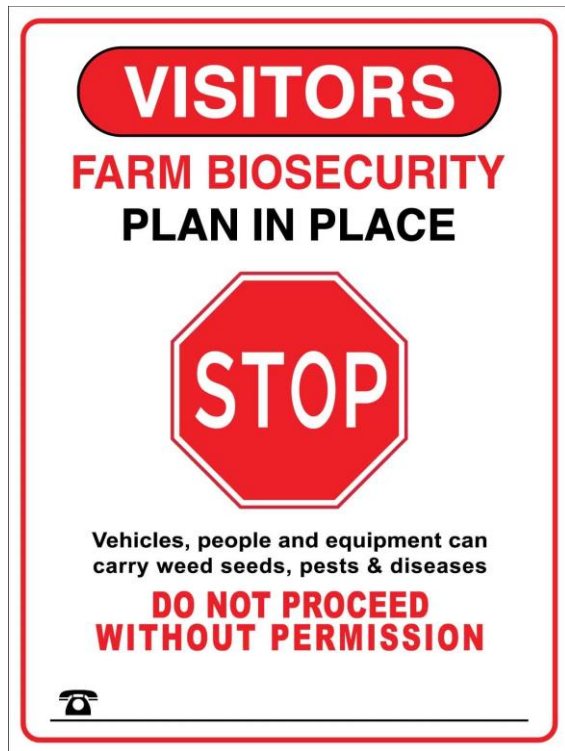


Conservation

3.0 Prepare Draft Application

3.5 On-site Inspection and Analysis tools

- Bio-security



Bio-security - It is recommended that QP's discuss bio-security concerns with landowners to ensure proper precautions and disinfection of vehicles and footwear are addressed prior to accessing lands.

3.0 Prepare Draft Application

3.6.4 Determine the potential for impacts to habitat

- Channel Disturbance Channel Clearing vs Channelization

Channel clearing (requires an AHPP, no Drainage Approval required)

- Involves removing beaver dams, debris, trees and shrubs, and the removal of silt and blow dirt from and along natural channels

Channelization

- Involves impacts to the bed of a watercourse by either widening, deepening, or straightening the waterway to increase the capacity for flow volume.
- Channelization is the construction of drainage works within a natural channel.
- Since channelization is a drainage work, all channelization that occurred in the past also requires a drainage approval.
- Reminder of Channel clearing factsheet - <https://www.wsask.ca/wp-content/uploads/2021/02/Channel-Clearing-Fact-Sheet.pdf>

Because of the sensitive nature of natural channels, appropriately mitigating the impacts of channelization is a major priority. Channelization will typically require an **Impact Mitigation Supplemental Report** to be submitted. Ask your WSA Tech for a template.

3.6.4 Impact Mitigation Supplemental Report

Impact Mitigation Supplemental Report: Erosion, channel disturbance, Species Risk

Section 1 – Project Information

Drainage approval number:	
Drainage project name:	
WSA Tech (Project Manager) name:	
QP name:	
Date QP conducted assessment:	

Section 2 – Land locations identified by the risk assessment for erosion, channel disturbance or species at risk (These should be listed as the quarters shown in ADAM as High Erosion Risk, Hydro Feature or Species at Risk)

High Erosion Risk

Quarter section	Do drainage works or flow routing directly impact the erodible soils	Drainage works	
		Existing	Proposed
	Yes ☐ No ☐	☐	☐
	Yes ☐ No ☐	☐	☐
	Yes ☐ No ☐	☐	☐

Channel disturbance (quarters identified as touching a hydro feature)

Quarter section	Do drainage works or channel clearing directly impact the channel, not just flow through (point disturbance, channel clearing, channelization etc.)	Drainage works/channel clearing	
		Existing	Proposed
	Yes ☐ No ☐	☐	☐
	Yes ☐ No ☐	☐	☐
	Yes ☐ No ☐	☐	☐

Species at Risk

Quarter section	Drainage works	
	Existing	Proposed
	☐	☐
	☐	☐
	☐	☐

Section 3 - Description of Proposed Work

Select the appropriate template below for high erosion risk/channel disturbance or species at risk. Complete one sheet for each quarter section where the drainage works or flows from the project impact the landscape feature flagged in ADAM. For contiguous channel clearing or channelization projects multiple quarters may be listed on a single page. Submit the entire information package to

High Vulnerability Watershed

Impacts			
Extent of Surface Drainage (how many drained wetland acres (existing/proposed) are included on the application?)			
	☐ < 10 acres of wetlands drained across entire network	☐ 10-100 acres of wetlands drained across entire network	☐ > 100 wetland acres drained across entire network ☐ C and D application
Permanent impact/work	☐	☐	☐
Permanent to remove topographic storage	☐	☐	☐
Temporary or one-time activity	☐	☐	☐
Erosion Potential			
Permanent impact/work	☐ No	☒ Yes	
Permanent to remove topographic storage	☐ No		
Temporary or one-time activity	☐ No		
Habitat			
Channel Disturbance	☐ Point Disturbance or bed/bank/shore outlet	☐ Channel clearing or Channelization < 50m in natural streams	☐ Channel clearing or Channelization ≥ 50m in natural streams
Permanent impact/work	☐	☐	☒
Permanent to remove topographic storage	☐	☐	☐
Temporary or one-time activity	☐	☐	☐
Disturbance to a 3rd order stream or greater			
	☐ No		☒ Yes
Presence of Rare or Endangered Species			
	☐ No		☒ Yes
WHPA or FWDF Lands			
	☐ No		☐ Yes
Low Risk Moderate Risk High Risk			

Reminder: Once the appropriate risk worksheet has been completed, please go back to the Mitigation Requirements worksheet (page 3) and use the information from the risk worksheet to determine the mitigation requirements that need to be implemented.

3.6.4 Habitat Risk

Updates to the Risk framework

Habitat Risk			
Channel Disturbance – Point Disturbance or bed/bank/shore outlet, Channel Clearing, Channelization			
☐ Standard Operation and Maintenance Conditions	☐ Standard Operation and Maintenance Conditions	☒ QP Report ☒ Special Operation and Maintenance Conditions	☐ Special Conditions ☐ Special project design requirements
Disturbance to 3 rd order stream or higher, Presence of Rare or Endangered species, and WHPA/FWDF Land			
	No (low)	Yes (high)	
Disturbance to 3 rd order or higher stream	☐ No mitigation required	☒ AHPP Review ☒ Special Conditions/project design considerations	
Presence of Rare or Endangered Species	☐ No mitigation required	☒ SAR Review ☐ Setback Distance ☐ Timing Restriction ☐ Special Conditions/project design ☐ Prohibitions ☐ Decline Approval	
WHPA or FWDF Lands	☐ No mitigation required	☒ Ministry of Environment Consultation ☒ Land Control (Letter of non-objection)	

3.7 Term Lengths

Term lengths of approvals for the operation of on-farm drainage projects					
Project Impact ¹	High	up to 35 years	up to 25 years	up to 25 years	Approvals not given except for consolidations up to 45 years
	Medium	up to 45 years	up to 35 years	up to 25 years	Approvals not given except for consolidations up to 45 years
	Low	up to 45 years	up to 45 years	up to 35 years	Approvals not given except for consolidations up to 45 years
		Low	Medium	High	Extreme
Watershed (sub-basin) Vulnerability					

3.8.2 Point of Adequate Outlet

The Point of Adequate Outlet (PAO) is the point at which no further land control is required to address neighbour to neighbour flooding or erosion impacts.

At the PAO, the additional water from drainage works will not create flooding or erosion impacts on lands outside of the Crown-owned bed at the localized scale (neighbor to neighbour impacts).

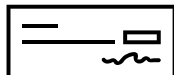
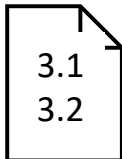


3.9 Determine Legal Parcels

How to determine if a parcel of land is in section 3.1 or 3.2? If there are any drainage works on the parcel (ditches, berms, flow controls, pumps, etc.) that parcel must be in 3.1. Section 3.2 includes all lands which do not have constructed works on them but are influenced by the project.

Table 1. Section 3.1 vs 3.2 summary

	Joint Application	Easement	Written agreement
Drainage Works or	3.1	3.1	Not acceptable form of land control for land with drainage works
No drainage works but impacted lands	3.1	3.2	3.2



Remember to request updates to ADAM when you:

- Are about to populate legal land location in section 3.1 and 3.2
- Have been given permission to collect signatures

3.10 Arrange Land Control

- Land control is typically the most difficult aspect to navigate in the drainage approval process.
- Throughout the approval process all impacted parties need to be involved in the discussions starting from the initiation of the project.
- The QP or landowners acting as the project proponent(s) are responsible for land control negotiations with all landowners.

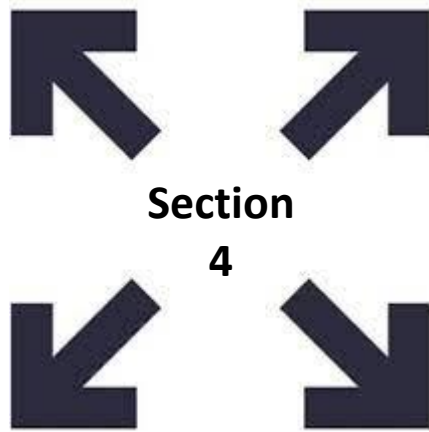
Remember: the type of land control varies by the organization owning the land.

- Table 2 in the D2 Operating Procedure lists some of the common types of land ownership you may encounter when working on a drainage project and how best to secure land control for lands owned by the various organizations.
- WSA can also assist QPs with land control on crown owned lands such as Ag crown land, WHPA, and FWDF lands.

Easements – Easements allow landowners to secure land control in a form that runs with the land.

- WSA has easement templates for use

3.11 Complete draft application form



4.1.1.2	Estimated total area of surface water beyond average historic wetland area drained or to be drained	This is used when there is extensive flooding beyond the "normal" extent of the wetland. <u>e.g.</u> The wetland is normally 2 acres but is currently flooded to 8 acres. 6 acres is beyond the normal wetland size so 6 acres is populated in this section.
4.1.1.3	Number of wetlands drained or to be drained	Using the query tool in ADAM this is the total number of wetlands impacted by drainage works
4.1.1.4 – 4.1.1.9	Area of wetlands	Using the Query tool in ADAM, these are the total acres of each category
4.1.1.10	Are any of the individual wetlands to be altered larger than 10 acres in size (average historic wetland area)	Are there any drainage works adding water to or removing water from a wetland that is normally 10 acres in size or larger?
4.1.1.11	Do any altered wetlands cross legal parcel boundaries	If any altered wetlands cross any legal parcel boundary (not just quarter lines) then this must be checked "yes".
4.1.1.12	Total length of ditches or tile	Using the query tool in ADAM, insert the total length of drainage work here
4.1.1.13	Will [or was] spoil dirt be used to build up banks of a stream or water body? If yes, please also check 4.1.4 or 4.1.5, below.	This could include any berms made with spoil material.
4.1.1.14	If existing works, was any spoil dirt from ditches placed in wetlands. If yes, please also check 4.1.2, listed below.	Applies to infilled or partially infilled wetlands
4.1.1.15	If consolidating wetlands, please indicate:	Fill out all sections so the consolidation calculations can be verified
4.1.2	Wetland infilling	Using the query tool in ADAM please completed this section if wetlands were infilled prior to the current drainage application



Questions and Discussion



Next webinar
December 19, 2022, at 11:00am