

# Documenting Landowners' Experiences of Water Security Agency's Drainage Mitigation Projects

March 30, 2022

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## **1.0 Introduction**

In spring 2020, the Water Security Agency (WSA) initiated demonstration and research projects to support the advancement of the Agricultural Water Management Strategy (AWMS) by testing various new and innovative approaches to mitigation. The projects represent an integrated approach to agricultural innovation that brings landowners, scientists, and other partners together to develop, test and monitor management practices and new technologies through real life context. These projects demonstrate how landowners can achieve drainage approvals while balancing economics and the environment. Each of the projects will be evaluated in terms of economic, agronomic, infrastructure and environmental outcomes. Another key component of the evaluation is the knowledge, experiences, and perspectives of partnering landowners.

This document describes landowners' experiences of the WSA's drainage approval process and the mitigation approaches for their drainage works. Information obtained from this project will help WSA with developing mitigation approaches that are effective at managing potential impacts of drainage in a way that is practical and acceptable to Saskatchewan producers.

Key participating landowners in the demonstration projects were interviewed to capture their experiences and perspectives on the approval process and approaches to mitigation. The Key Messages, individual Interview Summaries, and Feedback Synthesis in this report capture the interviewees feedback.

## **2.0 Key Messages**

A few key messages emerged from the synthesis of these interviews:

- Agricultural water management holds strong potential to improve farm productivity and profitability in Saskatchewan. This growth potential will benefit rural economies and the provincial GDP.
- Farmland drainage and provincial regulators both have a negative image historically. The benefits of drainage should be considered alongside the impacts, similar to other types of development. WSA must continue to work to be seen as an ally by landowners and agricultural producers. Having the right personnel and a client-focused process and culture will be important.
- The approval process for these demonstration projects worked quite well to meet the desired outcomes. However, timeliness of the process is a significant concern that should be addressed. An expectation of 0.5-3 months was expressed for simple, low impact, or well-planned projects. Sometimes the process currently takes years. Delayed approvals will greatly frustrate landowner interest in compliance. Timeline expectations should be established and clearly communicated to staff and landowners.
- Increasing post-construction inspections would expand WSA staff knowledge, build relationships with landowners, and improve compliance efforts.
- Landowners have creative solutions and modern agriculture technology can provide incredible data. These innovations should be embraced by the process.
- Qualified Persons (QPs) play a pivotal role in the current process. Their development and support should be a priority. This goes beyond the current technical training.
- WSA must prepare to handle a growing volume of applications. Having adequate staff resources and streamlined processes will be necessary.
- Mitigation of potential impacts should be acceptable to landowners, as long as they are reasonable, economical, and well promoted. Wetland retention (e.g. setting a minimum % retained) is reasonable, if done on a regional basis and in a tradable manner.
- Where storage and use of the water is suitable, it should be encouraged and incentivized. This potential should be explored at the local and regional levels.

### **3.0 Interview Summaries**

The interview guide was developed jointly by WSA staff and the consultant (Appendix 1).

Interviews were conducted via telephone from March 9<sup>th</sup>- March 21<sup>st</sup>, 2022. Summary notes from the interview were compiled by the consultant and provided to the participants by email, and they had the opportunity to review and comment on them before they were finalized.

The summary notes are presented below. A total of nine interviews were conducted regarding six demonstration projects (three projects each had two stakeholder's perspectives captured). Eight participants were landowner/applicants, and one participant was a landowner/Qualified Person (QP) for the project.

The individual interview summaries are presented anonymously. This decision allowed the participants more comfort to provide frank responses. It also allows the reader to focus on the feedback points regarding the approval process and mitigation measures.

## **Landowner Feedback– Water Security Agency AWMS demonstration project**

### **Interview Summary #1**

#### **Project Description**

This project includes V-ditch drains, pumping, wetland retention, a water retention reservoir, and an irrigation pivot. The project is a partnership with primarily one neighbour. The infrastructure was mostly existing, the goal was to get it all properly approved by WSA.

#### **WSA Drainage Approval Process**

This landowner found the process “really easy”. WSA staff were great to work with and the QP was fantastic. One reason that the landowner was willing to participate in a demo project was that they knew that these professionals would have extra incentive to complete the process.

One thing that was frustrating (but not unexpected) was the timeline of the entire process. It is taking a couple of years to get through all of the steps. If there is any way to speed this up, that would be valuable and make compliance more attractive to landowners.

As this project approval required both municipal and provincial governments, there was some stress that everyone would be co-operative and that it would all be acceptable. In the end, this was successful.

One suggestion for improvement of the process is to create a roadmap document that outlines the steps (and expected timelines) of the process. This would make the process predictable for landowners that are applying. It would also reduce the number of mistakes made by landowners as they design, negotiate, and apply for the project.

#### **Mitigation Approaches**

This project includes pumping at three locations, which produces slower flows than gravity works. It also provides complete control over the timing of those flows.

Using water from a reservoir to irrigate a few hundred acres of crop land provides significant risk reduction with regards to crop yields and profitability. It does not take a lot of water to sustain yields.

In consultation with the QP, some wetlands were retained intact. They were happy to do this in order to benefit the local environment and wildlife. These wetlands would be uneconomical to drain or would not benefit ag production significantly.

Implementing the mitigation measures was not a challenge, because it was mostly existing infrastructure that was known to be effective.

One additional approach that is worth considering is to focus on projects that benefit productive land, while leaving marginal soils in a natural state.

## **General Experience with the Demonstration Project**

This landowner is proud of the fact that there were no fights with neighbours, regarding the project. There was substantial time involved in communicating with all of the stakeholders.

### *Messages for other landowners:*

1. Having a use for the water (through irrigation) both reduces downstream impacts and benefits ag production.
2. The approval process is easier than you think, if there is a suitable place for the water to go.
3. Having a co-operative attitude with all stakeholders will ease the process.

### *Messages for the general public:*

Ag producers are trying to do the right thing, using available science and recommended practices. It is important that our businesses be profitable, as we are a key driver of the rural economy.

*The top three things the provincial government should think about when designing a practical approach to holding onto water and wetlands, and other approaches such as flow control or nutrient management:*

1. “Say ‘yes’ when you can”
  - The general desire should be to accept projects, within the required parameters. Work actively with the proponent to develop good projects. The economic benefits to the ag producer are an important part of the rural and provincial economy.
2. “Be flexible” to consider and try innovative ideas
  - Staff and decision makers should be ready to accept projects that take novel approaches to achieve the desired outcomes.
3. Mitigation measures (e.g. Flow controls) are reasonable and should be acceptable to landowners, as long as they are properly explained and promoted by government
  - Why and how are we implementing these measures into drainage projects?

## **Landowner Feedback– Water Security Agency AWMS demonstration project**

### **Interview Summary #2**

#### **Project Description**

This project includes Wolverine ditcher drains, in-filling, wetland retention, an urban reservoir, and an irrigation pivot. The project is a partnership with primarily one neighbour but involves a number of landowners. Much of the infrastructure was existing, some further minor works will be completed following approval. The goal was to get it all properly approved by WSA.

#### **WSA Drainage Approval Process**

The QP completed much of the technical work, negotiation, and paperwork. The QP role appears to be complex and requires a diverse skill set. This QP did an excellent job. Having an experienced and skilled QP was critical to the success of the process, including to help gain the trust and understanding of all stakeholders. In this case, communication between two QPs was a factor, as there was an adjacent proposal that was potentially connected.

One of the main challenges was communication and understanding with urban and rural municipal Councils. These folks are very busy and already overwhelmed with asset management issues. As well, they may not initially recognize the difference between a well-designed water management project and a big ugly ditch that floods neighbors. They just think of drainage as “bad”. Arriving at a common sense of the costs and benefits took time. Having WSA staff and the QP to explain to these stakeholders the project, the approval process, and the municipalities’ role was very important.

One suggestion for improvement of the process is to create some protection for the “founder(s)” of the proposed project. If adjacent landowners wish to join-on to a proposed project, it should not negatively affect the original project’s effectiveness or timeliness. Perhaps WSA could develop some guidelines to early- and late-comers rights in the process.

#### **Mitigation Approaches**

This landowner’s portion of the project does not require flow controls, according to the technical plan.

Some wetlands were retained intact. Wetlands that are large or deep provide meaningful habitat and make the most sense to maintain. Shallow & ephemeral “wet areas” with productive soils, or that are significant field obstacles, make the most sense to drain for crop land. This project accomplishes these “low hanging fruit” acres.

#### **General Experience with the Demonstration Project**

This landowner is proud of the fact that they were able to work with all of the neighbours to negotiate a project that will improve everyone’s land.

*Messages for other landowners:*

1. Shallow areas that are easy to drain and farm should be the primary target. Wetlands that are important habitat or difficult to drain can be maintained.
2. Drainage approvals – “Get them!” As an industry, the more compliance we have, the better our position. As individuals, having illegal drainage works results in significant risk of future liability.

People are more sensitive than ever, and information (such as air photos) are more accessible than ever. As well, non-compliance could affect land values in the future.

3. With the current approach, becoming compliant with legislation is relatively easy. In the future, it may not be as simple, so do it now.

*Messages for the general public:*

Field efficiency is an important factor in environmental sustainability and profitability. Removing obstacles to farm operations reduces the use of fertilizer and pesticides and optimizes food production. Producers are trying to do the right things, including respecting the needs of others and downstream infrastructure.

*The top three things the provincial government should think about when designing a practical approach to holding onto water and wetlands, and other approaches such as flow control or nutrient management:*

1. “Protect the rights of private landowners”

- Landowners have the right to manage their own property as they think best, as long as it does not negatively affect other’s property use.

2. There is a continued need for communications with rural and urban municipalities

- Understanding real vs perceived impacts of drainage
- Clarify the role of the municipality in the process. They are to protect their own infrastructure; the province determines appropriateness of the project overall.
- Municipal Councilors change regularly, so this education need will continue indefinitely.

3. “Continue to fund and staff this initiative”

- WSA staff involvement is important to the success of these projects. There will also be a need for more staff to review applications as compliance “ramps up”.
- Even more importantly, development of high-quality QPs is essential. The QP’s role in technical work, negotiations with stakeholders, guidance for proponents, and administrative work cannot be over-emphasized. Taking the QP course is a first step, but multiple skills are required to do this well.



## **Landowner Feedback– Water Security Agency AWMS demonstration project**

### **Interview Summary #3**

#### **Project Description**

This project includes surface drainage, tile drainage, and wetland retention. The project involves six quarter sections and one neighbouring landowner. The surface drainage was mostly existing, the goal was to get it all properly approved by WSA. Tile drainage was added for one wetland, following approval.

#### **WSA Drainage Approval Process**

This landowner found it “pretty painful” due to the slowness of the process. After 2.5 years of waiting, the landowner had to pressure WSA to complete the approval. This is simply an unacceptable period of time. The extended timeline was not due to local complications, it was just delays in the process within WSA. Otherwise, the process was “pretty reasonable”. WSA staff were fine to deal with and the QP did a very good job.

One suggestion for improvement of the process is for WSA to be prepared to accept alternate forms of data when considering project applications. New agronomic equipment and data can easily provide topographic and hydrometric information that could be used to determine impacts of the project without further work by technologists. Where this information is available to the landowner, it would save significant time in the process if it was used by WSA.

Another suggestion is that tile drainage and wetland consolidation projects should have an abbreviated review/approval process since the downstream impacts are much less than other works.

#### **Mitigation Approaches**

WSA recommended flow controls in the form of culverts, but they negotiated to re-shaped drainage swales. This work slows the flow of water but does not reduce the effectiveness of the project. The adjustments were not hard to make and are acceptable to the landowner.

Some wetlands are very difficult to drain or will provide a limited benefit when drained. It is quite acceptable to retain these wetlands with natural hydrology.

One mitigation measure that could be promoted is temporary storage. Reservoirs or storage wetlands can be released or pumped after the main runoff. This can address peak flow concerns downstream while still meeting the landowner’s need.

Tile drainage should be encouraged where suitable. This type of infrastructure automatically reduces peak flows and improves water quality when compared to surface drains.

#### **General Experience with the Demonstration Project**

This landowner is proud of the fact that last fall they accomplished a tile drainage project for one basin that includes 3 miles of pipe to an adequate outlet. This basin has been an agronomic challenge for two families for two generations. It was very satisfying to finally solve this water management challenge in a way that is effective and approved. The land will now produce a combination of hay and annual crops, rather than bare ground and weeds.

*Messages for other landowners:*

1. “We need drainage and wetlands”. Some spots are suitable and beneficial to drain. Some wetlands are not suitable to drain and should be retained. For this reason, a goal to retain 10-15% of wetlands is reasonable, as long as it is done on an area/project basis and not on a quarter section basis. Let’s retain the ones that “make sense”.
2. “WSA isn’t the ‘bad guy’”. These project approvals will have value to the real estate in the future. Their goal is compliance, not closing drainage works.
3. In the information age, nothing is hidden anymore. It is time to ensure that your works are built and approved for the long-term.
4. “If you get the opportunity to get out and move some dirt for making your land better, don’t wait for the permit.” If conditions are right (eg fall 2021), do not be held back. You will miss your window of opportunity in the field. You can finish acquiring the approval later.

*Messages for the general public:*

“Water management is important for the province’s GDP”. The benefit has three factors: field efficiency, arable acres, and soil conditions. Of the three, soil conditions may be the most important. The reduction of “bathtub ring” salinity around each wet area results in significant overall yield improvements. Modern ag data (yield mapping) is providing strong evidence of this.

*The top three things the provincial government should think about when designing a practical approach to holding onto water and wetlands, and other approaches such as flow control or nutrient management:*

1. “We need to get through the process in a timely fashion”
  - “If we are going to promote farmers to go and get permits, it can’t be a three-year process - that is unacceptable”. Three months would be reasonable, 9 months may be acceptable.
  - Producers that get approvals will promote it to others who are scared of the process, but only if the process and timelines are reasonable.
  - “It was a slow, tedious process”, once the project was submitted to WSA.
2. Keep in mind how much GDP can be increased
  - By making our existing land base “better”. There are significant gains to recognize.
3. Water management can benefit the net carbon balance of agriculture
  - Less obstacles = field efficiency = less energy use = lower carbon emissions
  - More crop growth = more carbon sequestered
4. Water management increases land values
  - Increased taxable land base
  - Real estate value for those who sell or leverage the equity

## Landowner Feedback– Water Security Agency AWMS demonstration project

### Interview Summary #4

#### **Project Description**

This landowner’s primary interest is irrigation. A few neighbors drain water onto his land, where he will use the large wetland as storage and install irrigation for forage production. The drainage and irrigation will gain the appropriate regulatory approvals.

#### **WSA Drainage Approval Process**

For this project, the drainage approval process is still underway. The QP started in the fall of 2021 and is doing very well, coordinating with each of the landowners and starting technical work.

Because they are early in the process and this landowner’s main involvement will be to use the water, there was not much feedback on this topic.

#### **Mitigation Approaches**

The landowner feels that irrigation holds strong potential in Saskatchewan and that using drained water for a local purpose is a very wise and beneficial practice.

#### **General Experience with the Demonstration Project**

This landowner is proud of the fact that they will be taking water that is a nuisance to someone else and using it to feed forage crops as a huge benefit to their cattle operation. Their natural waterbody will be providing flood protection, habitat, and irrigation reservoir storage. Adjacent are native prairie and productive irrigated land. It will be a beautiful combination on the landscape.

*Messages for other landowners:*

1. Having a use for the water (through irrigation) both reduces downstream impacts and benefits ag production.
2. In Saskatchewan, we regularly suffer from both shortages and excesses of water. It makes sense to design projects to address both concerns at the same time.

*The top three things the provincial government should think about when designing a practical approach to holding onto water and wetlands, and other approaches such as flow control or nutrient management:*

#### 1. Farmland drainage provides value

- Farming in circles is costly.
- Water management can increase our productivity and the provincial GDP
- Projects like this one are “win-win-win-win” for upstream landowners, downstream landowners, wildlife, and the economy

## 2. WSA will need more staff

- To achieve the compliance goals, there will need to be a much larger volume of applications, and they will need to be processed more quickly to be satisfactory.

## 3. Compensation paid between landowners needs to be considered in order to be equitable

- The draining landowner is gaining productive acres, increased land value, and farm profitability.
- The receiving landowner (storing water) is losing acres & land value. They will also face significant up-front infrastructure costs if they will be irrigating.
- Discussing compensation at the local level will be tricky. One good approach would be for the government to set a minimum compensation (\$/acre), and then the project landowners could negotiate from there.

## **Landowner Feedback– Water Security Agency AWMS demonstration project**

### **Interview Summary #5**

#### **Project Description**

These projects include wetland consolidation, wetland retention, flow controls, reservoir storage, and potential irrigation in the future. The projects will provide stock water to a few neighbors, but do not otherwise affect other landowners. The water all reaches an adequate outlet or is stored.

#### **WSA Drainage Approval Process**

This landowner has “never had any trouble working with the Water Security Agency”.

The QP has looked after all of the technical and administrative work, as well as much of the stakeholder negotiations. Working with the QP “is a dream” and has made the process very smooth. This has been an essential resource, from project conception forward.

The landowner did not have any negative comments or specific suggestions for the process, again noting that the QP had looked after everything.

#### **Mitigation Approaches**

The projects include flow control using 12” pipe and operable gates. They are very happy to use pipes rather than surface works. Pipes provide control of flow rates to prevent erosion downstream, should require no maintenance, and eliminate obstacles/hazards for field operations. They may be more costly to install initially.

Reservoirs (one constructed, one natural) provide wildlife habitat and may be useful for stock water or irrigation. If the water levels get too high on the constructed reservoir, it can be pumped to increase available storage.

Some wetlands were retained intact, being too deep to feasibly drain. Those wetlands should be “just left alone”.

#### **General Experience with the Demonstration Project**

This landowner is proud of the fact that they have gained hundreds of acres for crop production and improved soil quality (reduced salinity). They estimate that their whole-farm yield has increased 35% through the combined benefit. They also retained some wetlands for wildlife. Increased field efficiency will reduce overlap of inputs and save time. This results in numerous economic and environmental benefits.

#### *Messages for other landowners:*

1. Using pipes and storage, where possible, reduces downstream impacts and makes good use of the water.
2. Work closely with a QP and WSA to develop great projects
3. Good communication is the key with neighboring landowners and Rural Municipalities. Having a co-operative attitude with all stakeholders will ease the process.

4. “Get it approved”. Don’t just go ahead with works and hope to avoid enforcement/liability or seek compliance afterwards.
5. “If it can’t be drained, don’t worry about it”. Some wetlands are not economical to drain. Some projects will not be able to obtain permission from stakeholders.

*The top three things the provincial government should think about when designing a practical approach to holding onto water and wetlands, and other approaches such as flow control or nutrient management:*

1. The Saskatchewan Ag Industry can be significantly more productive when these types of water management projects have widespread adoption
  - The farmable acres gained vary but can be significant.
  - Reducing soil salinity can greatly benefit average yields.
  - The drained areas are often the most productive, especially in dry years like 2021.
2. Approvals must be timely, because the construction window is narrow
  - Construction windows are mostly after harvest and prior to freeze-up. Some years this is a very short period, so approvals must be in place in order to meet the opportunity. Some years are too wet for construction, so missing an opportunity can be very costly.

## **Landowner Feedback– Water Security Agency AWMS demonstration project**

### **Interview Summary #6**

#### **Project Description**

This project includes V-wing drains and wetland consolidation. Some basins are drained to a large wetland on the property, some are drained to an adequate outlet. The works were all constructed during the approval process.

#### **WSA Drainage Approval Process**

This landowner has taken the QP training, however due to time constraints has not been leading the process. WSA staff and the consulting QP have been looking after all of the technical work and negotiating with Ministry of Highways for land control downstream. Both WSA staff and the QP have been tremendous to work with.

One thing that could have improved the process was for WSA to actively communicate with the landowner as the process progressed. The landowner needed to keep reaching out to WSA staff to get updates on the status of the project approval. They would be more comfortable with the process if they were receiving updates periodically.

#### **Mitigation Approaches**

Three of the drained basins will flow to a larger wetland in the middle of the property. Wetland consolidation was suitable in this case because: a) the receiving wetland had not been farmed in 5-10 years, b) salinity would likely limit crop production, c) topography would have made this wetland costly and difficult to drain, and d) because the receiving wetland is larger than the drained basins, the flooded area won't increase significantly. This landowner also likes the optics and story of wetland consolidation.

The landowner is interested in some irrigation from the remaining wetland in the future. It could possibly be used as a reservoir that is filled by pumping from other lands.

Other mitigation approaches that should be further investigated with regards to runoff water quality include agronomic practices such as 4R nutrient management, cover crops, and residue management. However, it is unclear how short-term agronomic practices (that are necessarily fluid) fit with a long-term regulatory approval.

#### **General Experience with the Demonstration Project**

This landowner is proud of their use of some agronomic Beneficial Management Practices that improve soil health, water infiltration, and runoff water quality.

*Messages for other landowners:*

1. Develop positive and productive relationships with WSA staff. They are able to provide valuable guidance towards the development of well-planned projects and applications for approval.

*The top three things the provincial government should think about when designing a practical approach to holding onto water and wetlands, and other approaches such as flow control or nutrient management:*

1. “It is important to not lose sight of the farmer’s perspective”

- Ag producers have weighty economic considerations with their land management and project design and implementation.
- Government needs to balance the rights of the landowner and goals of food production with the desires of other stakeholders.

2. Recognize the complexity of BMPs as a mitigation approach

- Agronomic practices, site conditions, topography, seasonality, and weather conditions can greatly influence the outcomes of the BMPs with regards to water quality.
- More research is needed to assess these practices under different conditions and identify the ones with the strongest potential to mitigate effects of drainage.



## **Landowner Feedback– Water Security Agency AWMS demonstration project**

### **Interview Summary #7**

#### **Project Description**

This project includes tile drains, a pump lift station, a pipe to adequate outlet, and wetland retention. All of the infrastructure was installed after project approval and will operate for the first time in Spring 2022.

#### **WSA Drainage Approval Process**

The process “was really easy” for the landowner because the QP did all of the work. About 10 years prior, a contractor had completed a detailed topographic map of the land, which the QP used as a starting point. The entire process took one fall and winter (1/2 year), which seems reasonable to the landowner, considering that they consider the project an investment in the next 30 years. The QP is very valuable. The cost of the QP is very worthwhile considering the benefit of the project.

The project required land control from the Rural Municipality. This municipality is open to accommodating drainage projects, as long as “you put your ducks in a row and get proper approval”.

The landowner had no complaints about the process. This project was successful because the pipe reaches an adequate outlet (creek).

One suggestion for improvement is for WSA to follow-up after construction. There could be confirmation of the work performed (and a learning opportunity for staff) if there was a field inspection after construction. The landowner is pleased to show the project.

#### **Mitigation Approaches**

Weeping tile was installed to “connect the dots” between all of the basins. A few deeper basins are only partially drained – the tile is not at the bottom of the basin, in order to meet elevation/slope needs. The lift station and pipe set the maximum flow rate from the project.

The challenge to using all pipe and a lift station was the significant expense. This up-front cost could not fit in the annual budget. The landowner approached their lending institution with the project plan and approval. With these details, the lender was quite willing to finance the project over 25 years.

The landowner left at least 5 acres of wetland intact per quarter section. Wetlands along the road or in the corner of the field are not obstacles to farm operations and were left in a natural state.

Regarding mitigation, the landowner believes that habitat in the outlet creek has been enhanced by drainage, as there is now more water over a longer season.

#### **General Experience with the Demonstration Project**

This landowner is proud of the fact that they will now seed a consistent number of acres each year (previously it could vary by over 100 acres). Seeded acre maps from the equipment GPS make this apparent.

*Messages for other landowners:*

1. “Don’t worry about mitigation”. It is achievable. On some quarter sections, you may be able to farm 160 acres. On others, you may leave 10 acres of water, which is fine. It should not be difficult to have enough wetland retained to obtain an approval. Also, most landowners are happy to retain some habitat.
2. Getting approvals “is doable”. The important things are identifying an adequate outlet and working well with your neighbors. “It might cost a bit to do that.” Being willing to “give and take” on the scope and details of the project is necessary. You may need to compensate neighbours if you benefit more than they do.

*Messages for the general public:*

“Drainage is good for the environment; a good healthy crop puts away carbon.” Most wetlands are not doing anybody any good anyway. Water management benefits soil health because waterlogged soils are very unhealthy. Soil health is essential to mankind.

(The participant mentioned that they no longer use the field efficiency justification when speaking to the general public. That just seems to annoy people because they then think that drainage is purely driven by greed or convenience.)

*The top three things the provincial government should think about when designing a practical approach to holding onto water and wetlands, and other approaches such as flow control or nutrient management:*

1. “WSA has to make themselves approachable”
  - The complaints-based history of WSA has garnered a negative brand. Many landowners are afraid to engage with the Agency.
  - Farmers need advice. If they see WSA as a place to get help to improve their farm, compliance will increase significantly.
  - Hire staff that can converse well with farmers. Advertise to producers that WSA “wants to help you improve your farm”.
2. Explain to “environmentalists that there will still be habitat out there”
  - Not all wetlands will be drained. Some will be retained and can provide a home for wildlife. Some other habitats will be enhanced by receiving extra water.
3. Draining can result in good water quality
  - Excess nutrients going downstream can be easily prevented through good practices (tile drains, buffer strips, etc.)

## **Landowner Feedback– Water Security Agency AWMS demonstration project**

### **Interview Summary #8**

#### **Project Description**

This project includes tile drains, a pump lift station, a pipe to adequate outlet, and wetland retention. All of the infrastructure was installed after project approval and will operate for the first time in Spring 2022.

This interview was with the QP for the project.

#### **WSA Drainage Approval Process**

This was the first drainage project undertaken by this QP. There was much to learn at each step of the process. There was a lot of “back & forth” with WSA staff to ensure that everything was correctly and optimally completed with the plans and application. This worked quite well, there was open & ongoing communications with the primary WSA contact, and responses were timely. The regular contact throughout the process helped to ensure that the application and project were successful.

Determining an Adequate Outlet should be done very early in the process. This is a topic that would benefit from more education towards landowners and QPs.

One challenge was the functionality of A.D.A.M., the mapping program used by WSA and QPs. It is good to have tool like this to make everything consistent, but the program is not very user friendly and seems to have a number of “glitches”. Hopefully this functionality can be improved in order to save time and frustration. As well, if there was a quicker way to delineate all of the basins, that would be beneficial too.

#### **Mitigation Approaches**

Weeping tile was installed to connect all of the basins. A few deeper basins are only partially drained – the tile is not at the bottom of the basin, in order to meet elevation/slope needs. At the last basin on the project land, there is a 20’ automatic lift station, then a buried 12” pipe to the adequate outlet (creek). The lift station and pipe set the maximum flow rate from the project. Using pipe as opposed to surface works is more expensive but more effective. It reduces downstream impacts of water quantity and quality, reduces future maintenance needs, and leaves the land unobstructed.

Flow controls are easily included in projects using culverts, gates, or buried pipe of various diameters.

Wetland consolidation makes good sense when there is not a cost-effective adequate outlet or land control cannot be obtained. However, many landowners “want the water gone” and are less interested in a project if it only moves the water on the parcel of land.

Another approach that holds merit and should be explored, when feasible, is to make use of the water that is being collected. There are many places and users without adequate water supplies.

## **General Experience with the Demonstration Project**

This QP is proud of the fact that a successful project was completed in concept, approved, and implemented. The lift station is a unique tool that should work well.

### *Messages for other landowners:*

1. “Have an open mind” to different design options that may be suggested by the QP, WSA, or other stakeholders. There are many strategies that can achieve the goal.
2. Look at the big picture of how everyone can benefit. Where appropriate, design the project for a region rather than one parcel/landowner.
3. “Envision the end goal.” An open ditch may not be a good long-term solution. Pipe is easier to approve, “looks better”, and is more likely to “make everyone happy”.

### *Messages for the general public:*

“Drainage is not ‘bad’.” When done strategically, it can benefit the landowner(s), habitat, and other people (e.g. provide water to a reservoir).

*The top three things the provincial government should think about when designing a practical approach to holding onto water and wetlands, and other approaches such as flow control or nutrient management:*

## 1. Think about drainage as being similar to irrigation

- Excesses and shortages of water have similar implications: higher costs, less production, a weaker economy, etc.
- Significant resources are being put towards irrigation development in Saskatchewan. A similar benefit would be achieved from resources towards ag water management.
- This may include landowner grants for drainage projects, particularly if they provide source water to another user.
- Providing technical resources similar to Irrigation Branch would be beneficial.
- QPs should be well trained, supported, and advertised to landowners.

## 2. Recognize that there are landowners “doing things properly”

- Although there are some illegal and impactful drainage works in the province, many landowners are working to complete well designed, approved, effective projects.
- The more positive stories there are, the more landowners will join the movement.

## **Landowner Feedback– Water Security Agency AWMS demonstration project**

### **Interview Summary #9**

#### **Project Description**

This project includes surface drainage, tile drainage, and wetland retention. The project involves a number of quarter sections and one neighbouring landowner. The surface drainage was mostly existing, the goal was to get it all properly approved by WSA.

#### **WSA Drainage Approval Process**

This landowner expressed that the process “timelines are ridiculous”. There are too many layers to the process and desks for files to cross. This includes the municipality, QP, WSA, and sometimes other stakeholders. If each stage takes a number of weeks, the overall timeline becomes prolonged. “Let’s get stuff done.” The participant noted that they see that WSA recently has an obvious desire to reform and that the process is becoming “less awful”. There should be expected timelines set for the process, with accountability of staff to meet these measures.

The participant explained that many farmers now have the technology and ability to measure elevations and complete hydrology assessments and designs that resemble those currently being performed by QPs and WSA. For those clients that have demonstrated that ability, it was suggested that there should be an expedited approval process. Where all of the technical design and land control are in-place, approvals should be completed within two weeks, with WSA staff time focussed on on-site audits of the project. Currently, there is a lack of post-construction inspections. This field time would result in better compliance than office time currently is. In addition to the expedited projects completing the process more efficiently, they would also become an attractive example for other landowners. More farmers would expand their capacity and diligence, if they see that it could lead them into a quicker process stream.

The process needs to be “simple, logical, and meet expectations”, in order to be successful.

#### **Mitigation Approaches**

Flow control with pipe sizing is straightforward and effective. Gates that must be operated are an ongoing management issue and seasonal timing or appropriateness can be tricky.

Some wetland retention is amenable. If a % retention minimum is established, it should be on a per-region or per-project basis. It is not appropriate to require retention on every parcel of land since some parcels and basins are much more suitable for drainage than others. One way to achieve retention targets while remaining flexible and reasonable is to allow for credit trading as a mitigation approach. One project could purchase the required acres of wetland retention credit from other projects or landowners nearby.

With regards to downstream infrastructure protection, it is important that RMs take responsibility for their roads as they affect hydrology. Elevated roadways act as dams and often have inadequate culvert placement and capacity to handle years of higher natural flows. Although farmland drainage is blamed for infrastructure damage, these capacity issues are a significant factor and one that should be

addressed by the municipalities and the province, as a necessary step towards resilience and to meeting the potential economics benefits of ag water management.

### **General Experience with the Demonstration Project**

This landowner is proud of the fact that last fall they accomplished a drainage project for one basin that has been an agronomic challenge for decades. The land will now produce a combination of hay and annual crops, rather than being an eyesore. Neighborly co-operation has also been strong.

*Messages for other landowners:*

1. The approval process is “less awful than it used to be” and seems to be getting better. When it is reasonable, we should all aim to become compliant.
2. Be collaborative. All parties need to put in the effort to make things better.

*Messages for the general public:*

Cities are an example of drainage projects that can have huge water quantity and quality impacts downstream. Farmland drainage should be kept in perspective with other forms of development.

*The top three things the provincial government should think about when designing a practical approach to holding onto water and wetlands, and other approaches such as flow control or nutrient management:*

1. “Ensure that we look at economics and the environment”
  - We should be promoting and supporting ag water management, which has significant potential to build the provincial GDP.
2. Have a huge focus on the “customer journey”
  - Landowners should be treated as a customer, with expectations met.
3. Compare urban and rural water impacts and communicate this with everyone so that we all have reasonable expectations
  - We have all have responsibility for water issues and should continue to improve.
4. “Find progressive farms to collaborate with, to help create buy-in from the farm community”
  - Good project examples with a smooth approval process will draw more landowners into pursuing compliance.

## **4.0 Feedback Synthesis**

Each of the interviewees were quite willing to provide feedback regarding their projects. They were appreciative of the opportunity to make some recommendations to the province as it proceeds with the AWMS. Their thoughts were gathered regarding the WSA approval process, drainage impact mitigation approaches, and their overall experience with the implementation of their project.

Overall, feedback messaging was quite consistent. The AWMS is considerably more positive and effective than previous approaches. Further adaptation and effort will be needed to improve communications, relationships, and levels of compliance.

A number of themes developed:

### **The Impacts of Ag Water Management - Benefits**

One common theme of the responses was regarding the public's general viewpoint of farmland drainage. In Saskatchewan, the visible history of drainage has often been one of negative relationships. Landowners did not seek advice or approval before constructing works. The provincial agencies that were responsible for regulating drainage worked on a complaints-based approach, which meant that most interactions began with a negative context. Concerns about downstream impacts of water quantity and quality were often highlighted by communities, the media, and watershed groups.

Participants wished to make the point that farmland drainage also has a number of positive implications. There are many examples of well designed and licensed projects. Sometimes, neighbors and municipalities have worked well together to implement projects. The primary driving force behind drainage projects is to increase farm profitability. Improved profits directly benefit the farmer and the landowner, while indirectly benefiting the rural and provincial economies. Some projects provide water to users that may otherwise have inadequate supplies.

Gains in farm productivity and profitability come from three main benefits of water management. More acres are available for cash crops. Fewer field obstacles result in more efficient farming operations. In many cases, the third advantage may be the greatest – soil health. Waterlogged or salinity-affected soils are not healthy or productive.

### **The Value of Compliance**

A few of the landowners talked about the benefits of acquiring approval for their works. They felt that having proper approvals would increase their land values and decrease future liabilities. They also felt that high levels of compliance in the province would improve the public's view of agriculture and may slow the "need" for more restrictive regulations.

## **The Water Security Agency and the Approval Process**

Another theme that emerged was that of WSA's approach and available resources to lead and manage the large body of work required by the AWMS. Participants were complimentary of the WSA staff that they interacted with throughout the process. They also recognized that WSA has been making a decided effort to develop positive working relationships with individual landowners as well as many stakeholder groups in the province. However, it was noted that the majority of landowners are likely not yet aware that having such a positive relationship with WSA is to be expected.

WSA leadership and staff will need to continue intentional efforts to develop productive relationships with all stakeholders, especially landowners who may be suspicious of the Agency or the approval process. These efforts may include staff training and work plans that include proactive communications with clients. Hiring staff & contractors with a practical understanding of agriculture and experience in extension work with producers will be important. It was stressed that the optics of the Agency as an organization and as individual staff must be an "approachable" group that are looking to help landowners develop ag water management projects. They should not be seen as simply the enforcers of regulations.

The capacity of WSA to handle project applications also came up frequently. Timeliness of the approval process was highlighted as one of the most important aspects of attracting landowners into compliance. Some interviewees found that the process timelines were reasonable (3-6 months), especially considering the complexity, number of stakeholders, and long-term nature of the projects. However, many participants pointed out that in their case the process took longer than one year, and this is not acceptable to most landowner's expectations. Construction windows can be quite narrow between harvest and winter.

It will not attract more clients to the process if they hear that their neighbors and colleagues were very frustrated by an extended timeline for project approval or by inadequate communications from WSA. The Agency will need to have streamlined processes and adequate staff resources to handle the anticipated growth of project applications as the push for compliance continues. There may be a large volume of approval process uptake in the future, and capacity must be available to manage this in a professional and timely manner.

An interesting comment was made a few times about post-construction inspections. Participants felt that this part of the process was lacking. It was suggested that these field inspections would greatly benefit WSA staff learning and working relationships with landowners. It was further suggested that the function of construction audits would be more effective in gaining compliance than extra effort on design & approval – landowners will construct and operate well if they expect to be checked up on.



## **Qualified Persons**

The landowners' experiences with QPs were investigated. They felt strongly that the consulting QPs were essential to the success of their projects. The roles of the consultants were many. Communications with the landowners included explaining the approval process and requirements, discussing land control and project design, and updates on the progress of the planning and application. QPs also co-ordinated with all landowners involved, negotiated with municipalities, obtained land control, and adapted designs with WSA. Technical skills were important, but equally important were communication and negotiation.

Some of the participants felt that further development of QPs needs to be a priority for the AWMS. More QPs will be required as the volume of interest grows. Private industry could supply skilled and motivated individuals. Identifying and training skilled consultants will greatly simplify the process for landowners and WSA.

## **Mitigation Measures**

Impact mitigation approaches that were tested and promoted through the demonstration projects were generally acceptable to the interviewees. It was felt that mitigation measures that are reasonable should be accepted by landowners in general, as long as they understand the purpose and effectiveness of them. It will be important for WSA to communicate to landowners the benefits of the approaches, as well as expected costs and implementation considerations. If staff understand and can explain the practical aspects of the mitigation tools, this will help with acceptance and compliance.

Flow controls that slow but do not limit the removal of water (typically culverts or pipes of a certain diameter) were seen as reasonable additions to project design. Operable gates on pipes that must be opened/closed at certain times were also tolerable, but it was noted that they may have been extraneous or that ongoing management of the gates as desired will be problematic.

In certain situations, water storage for irrigation is possible. When hydrology, agronomics, and landowner desire combine to make this a feasible option, the potential is excellent. Landowners that will (or may) be involved in such a scheme were very excited about the potential to use water that is a nuisance in one location as a valuable resource in another location. Stock water is another potential use for the water, and there certainly could be other agricultural or industrial uses as well, depending on location. Participants felt that these opportunities should be promoted and explored as much as possible.

Wetland retention was seen as acceptable mitigation. Some wetlands are not economical or beneficial to drain anyway. Most landowners wish to preserve some habitat. It was stressed that retention targets should not be applied on a land parcel scale, a project or regional scale would be more appropriate, and flexibility should be included (e.g. the ability to trade retention credits between projects or landowners).

## **Municipal Relations**

Many farmland drainage projects require land control or co-operation from municipalities. This will be mostly RMs but can sometimes include urban municipalities as well. Some communities are favorable to drainage, while others are neutral or opposed to the concept. Sometimes municipal personnel are confused as to their role in a project approval. They should consider their own infrastructure but realize that it is the province that approves the development overall. As personnel changes over time, there will remain an ongoing need for communication with municipalities about the AWMS and regulations.

## **5.0 Consultant Observations**

The participants in this exercise were very willing to take the time to provide this feedback and had thoughtful responses. The conversations yielded some interesting suggestions that are worth consideration and are contained in the report. A couple of overall messages about the Approval Process and mitigation became apparent during this process.

Regarding drainage impact mitigation, these landowners seemed fairly accepting of the measures that were evaluated by these demonstration projects. Flow controls, temporary and ongoing storage, and wetland retention all have their place. These types of measures can receive uptake by most landowners if they are properly promoted.

The AWMS seems to be off to a good start. To be successful in the long term, it will be important for the process and the people to continue to work to gain the trust of landowners and other stakeholders. Process timeline expectations must be clear and accountable. WSA should actively develop and maintain positive working relationships with landowners. This begins with the corporate culture and includes empowering staff (and QPs) to interact with landowners as valued customers. Having people that are intentional about relationships with the rural community has proven to be successful in achieving the uptake of recommended agricultural practices over Saskatchewan's history. These demonstration projects are actually a good example of that fact. Relationships require effort and are essential to all successes.

## **Appendix 1**

### **INTERVIEW GUIDE**

#### Documenting Landowners' Experiences of WSA's Demonstration Project

##### **Preamble:**

As you are aware, the Water Security Agency (WSA) initiated demonstration and research projects in Spring 2020, with a goal of supporting the advancement of the Agricultural Water Management Strategy. These projects are testing new and innovative approaches to mitigate the impacts of draining wetlands. These approaches include flow control, retention of wetlands, using drained water to irrigate, and consolidation of wetlands. You may have applied one or two of these approaches in your drainage project.

WSA is working with research partners to better understand the economic, agronomic, infrastructure and environmental outcomes of these projects. WSA would also like to hear about your experiences as landowners who are participating in these projects - this is the reason why I am conducting this interview. The information that you provide will help WSA in developing mitigation approaches that are effective at managing potential impacts of drainage in a way that is practical and acceptable to Saskatchewan producers.

I should clarify that this is not a media interview. WSA may use the information that you provide during their engagement activities, but your name will not be attributed. While WSA will work to ensure that your information is anonymous, it may be possible for the audience to identify or associate some details of the demonstration projects. Also, there may be specific quotes that maybe are worth highlighting - I will be reaching out to you and ask for your permission.

To make sure that my notes correctly represent what you say, I'd like to take record our interview. The recording is confidential, and I will delete the recording after I have completed this project. Is this okay with you?

Do you have any questions before we start?

##### **Interview Questions:**

1. Can you briefly describe your project?

**The next set of questions are meant to understand your experience with WSA's drainage approval process.**

2. Can you describe your experience through WSA's drainage approval process?

Sub-questions:

- What are the things that worked well for you?
- Are there any frustrating steps/elements?
- Do you have any suggestions on how WSA can improve on the drainage approval process?

**I will now move to the questions that pertain to the approaches that you applied to mitigate potential impacts of wetland drainage.**

3. Can you talk about how you used flow controls in your project?
4. How did you store water or hold on to wetlands in your project?  
*For landowners who used irrigation: Can you talk about how you used water that you have drained from a wetland to irrigate?*
5. Were there any challenges for you in implementing these flow control or water retention approaches? If so, how do you think these challenges can be addressed?
6. Are there other potential approaches to manage habitat or downstream impacts that you think are worth considering?

**The last 6 questions are meant to capture your general experience with the demonstration project.**

7. What parts of the project are you most proud of?
8. What point would you consider as your main take away/learnings from the project?
9. What would you want other landowners to know about wetland mitigation?
10. What would you want other landowners to know about getting drainage approvals?
11. What would you want the non-agricultural community or public know about ag drainage or wetland mitigation?
12. Based on your experience, what are the top three things the provincial government should think about when designing a practical approach to holding onto water and wetlands, and other approaches such as flow control or nutrient management?

In the next several days, I will be summarizing the information that you provided today, and I will be sharing a copy with you. This is to ensure that your perspectives are captured accurately. (Confirm their email address, set expectation/method for their reply)

Thank you very much for your time. As I mentioned earlier, the information you provided will help WSA in the development of mitigation approaches. I am sure WSA will be engaging with you again in the future.