

Implementation of Nutrient Management Training Program for Farmers and Manure Management Program Review



A report to the Governor and Legislature

In response to
ESSB 6052 Senate Bill
Chapter 4, Laws of 2015
Section 309(3) (page 120-1)

June 2017



Washington
State Department of
Agriculture



STATE OF WASHINGTON
DEPARTMENT OF AGRICULTURE
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July 7, 2017

TO: Members of the Washington State Legislature

FROM: Derek I. Sandison, Director

RE: Submission of the final report to the legislature as required by proviso in the FY2015-17 budget.

I respectfully submit the third and final report as required by proviso established by ESSB 6052 in the FY2015-17 budget titled "Implementation of Nutrient Management Training Program for Farmers and Manure Management Program Review." This submittal satisfies the requirements of the proviso.

The department will continue to work with stakeholders to further refine the recommendations contained in this report. We will also be providing the legislature with periodic updates concerning progress on implementation of programmatic improvements to our Dairy Nutrient Management Program.

Sincerely,

Derek I. Sandison,
Director

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This is the third of three reports required by the budget proviso established by ESSB 6052, Chapter 4, Laws of 2015, Section 309(3) (page 120-1). The previous two reports (December 2015 and June 2016) focused on progress made toward meeting the proviso requirements. This report incorporates and updates some information provided previously. It provides an overview of all the work done under the proviso and completes the reporting requirement.

NOTE: The proviso requires this report to be submitted on June 30, 2017, but final data from June 2017 activities was not available at the time the report was prepared. Some projections have been included in lieu of final data.

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1. INTRODUCTION and BACKGROUND

Farmers have long used manure to build healthy soils and fertilize their crops, adding nutrients to support and enhance growth and yield. However, manure also has the potential to pollute streams, lakes, rivers, and other surface waters, as well as groundwater.

Good manure management is important for protecting water quality in Washington State. Through its Dairy Nutrient Management Program (DNMP) the Washington State Department of Agriculture (WSDA) registers and inspects dairies, and initiates actions to administer and enforce the state Dairy Nutrient Management Act (Chapter 90.64 RCW).

Although administering the act and related rules (Chapter 16-611 WAC) is at the core of the DNMP's duties, regulation and enforcement are not enough to ensure water quality. Communication, education, and technical assistance are also key. As a pilot project, the DNMP funded¹ two January 2015 training events for manure applicators. The training was developed and conducted by the Whatcom and South Yakima Conservation Districts.

In July 2015, ESSB 6052 Senate Bill, Chapter 4, Laws of 2015, Section 309(3) provided WSDA with funding for additional farmer outreach and training in agronomic application of dairy nutrients (manure). WSDA was appropriated \$575,000 for this work, and under the budget proviso (see Appendix A) the department was required to:

- Provide interested parties the opportunity for input into the training curriculum.
- Develop an accreditation process to track completion of training by individuals that apply manure;
- Offer to review farms' applications of manure (when, where, how much) in regard to meeting crop nutrient requirements and protecting waters of the state;
- Report on the level of participation and results of the [training] program; and
- In consultation with interested stakeholders, identify gaps in the manure management program, and report on a strategy to address those gaps.

This first section of this report provides background information on WSDA's approach to the proviso. The second section provides an overview of the training and outreach funded by the appropriation, and the third section identifies issues and possible strategies for addressing them. Supporting information is provided in appendices.

¹ Funding was from penalty accounts established in the Dairy Nutrient Management Act (RCW 90.64.150).

1.1 Approach to the Proviso

WSDA addressed the proviso requirements through the following:

- **Grants for delivery of nutrient (manure) application training and tool.**

The DNMP offered grants for educational opportunities to “provide land applicators of manure with tools and information to make good decisions that include the right amount of nutrients applied in the right place and at the right time.” Instead of providing training directly itself, the DNMP put funds into the hands of those that could provide training most effectively.

This allowed curriculum to more easily be customized to different locales around the state, and it allowed local relationships to be strengthened. It also allowed multiple trainings to be developed and take place within the limited (2-year) timeframe covered by the appropriation. Interested parties, such as conservation districts and Washington State University, had the opportunity not only to provide input into the curriculum, but to deliver it as well.

- **Expanded inspection capacity.**

The proviso allowed for appropriated funds to be spent to “increase inspection activities in watershed, including those areas with impaired surface or groundwater impairment.” The DNMP hired two additional inspectors, which allowed the program increase inspection activity and respond to more requests for technical assistance from agricultural producers.

- **Consultation with an advisory committee.**

The Director of the Department of Agriculture formed the Dairy Nutrient Advisory Committee to help identify potential operational improvements to WSDA’s Dairy Nutrient Management Program (DNMP). Committee members represent a broad cross-section of stakeholders (see Appendix E). The committee reports to the Director. The committee considered policy, natural resources, funding, operations, and roles/relationships. It’s input aided WSDA in identifying priority issues to address the “gaps and strategy” portion of the proviso.

Both the grants and the advisory committee reflect the important roles partners play in protecting water quality from manure. The DNMP is only one piece in the regulatory framework. The federal Environmental Protection Agency, state Department of Ecology, Conservation Districts and State Conservation Commission also play key roles. Understanding them is helpful for considering the issues and strategies identified in Section 3. See Appendix B for more information.

2. TRAINING and OUTREACH

The funds covered by the proviso were appropriated “solely to implement a nutrient management training program for farmers that provides training in agronomic application of dairy nutrients, as defined in RCW 90.64.010.” At least \$75,000 had to be spent in each of Fiscal Years 2016 and 2017. WSDA applied the funds to training grants, outreach and technical assistance. The proviso also requires WSDA to report on “the level of participation and results of the program.” A summary of the efforts is provided below. For more information, see Appendices C & D.

2.1 Training Grants

WSDA issued three requests for proposals for agronomic education and outreach—September 2015, March 2016 and the final request in September 2016. The agency received 21 proposals and ultimately funded 17 of them for a total of \$271,100.

Enabled by the grants from WSDA, 11 conservation districts, Washington State University, and one private firm conducted 32 training events. Total attendance is projected to be over 1000. Participants in the training events included dairy operators, non-dairy livestock producers, crop consultants, custom handlers, berry and other crop producers. (See chart, next page)

Participants who completed training received a Certificate of Training from the training entity. As part of each individual grant, the training entity was required to provide a list of participants to WSDA. WSDA has compiled data from the lists to “track completion of training by individuals who apply manure” as required by the proviso.

In addition, WSU has developed:

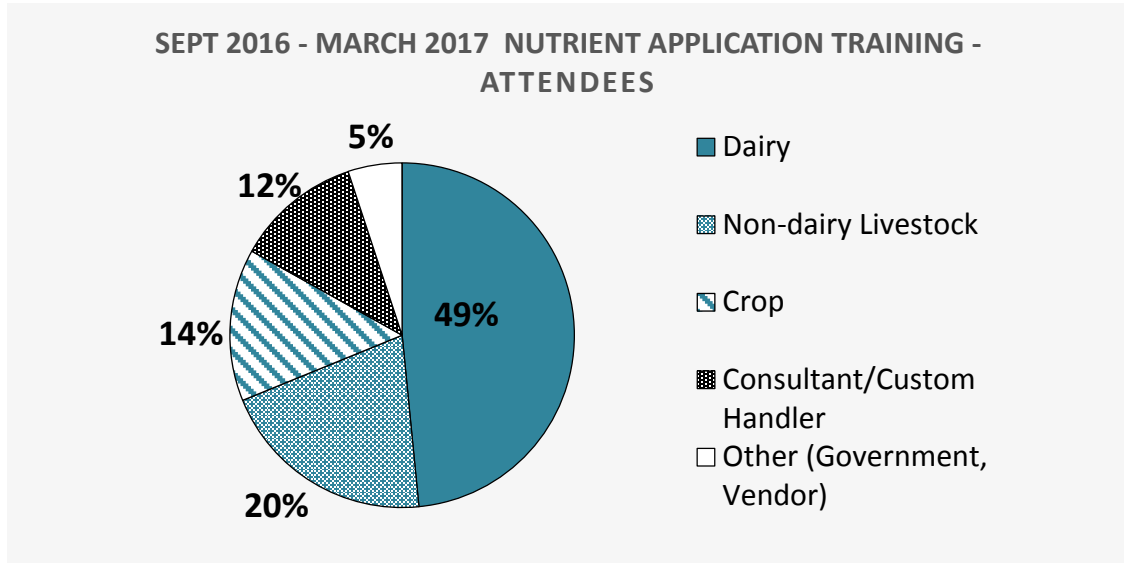
- two recordkeeping tools, a calendar and notebook, to keep records of land applications
- a web-based tool to help farmers develop nutrient budgets to meet crop needs while protecting groundwater.

From the proviso:

... The department shall develop an accreditation process to track completion of training by individuals who apply manure.

...In developing the curriculum for agronomic education and certification programs, the department will provide opportunity for input from interested parties including: Washington State University, state conservation commission, department of ecology, conservation district staff, and representatives from agricultural, livestock, and crop organizations, environmental organizations, tribal government representatives, and certified crop advisers.

* WSU is also working to develop an education program that will inform livestock producers about how feed management can be adjusted to reduce the amount of nutrients in the manure. WSDA is looking for opportunities to help fund these training events.



2.2 Outreach and Technical Assistance

WSDA used some of the funds to increase inspection capacity. Two new DNMP inspectors were hired in September to help the program meet the additional work associated with the proviso. One was assigned to the Northwest Region office and one to the Eastern Region.

Having the additional staff allowed DNMP to expand its outreach and technical assistance activities, such as field walks to review manure applications and how to protect surface water quality. DNMP was also able to complete the process to evaluate manure lagoon operation and maintenance, and also to fulfill requests such as providing GIS mapping of manure lagoon inspections, land application of manure and water quality sampling.

For more information, see Appendix D.

From the proviso:

...The department shall also offer to willing farms to review agronomic application of dairy nutrients, as defined in RCW 90.64.010, used in crop production, including when, where, and how much manure to apply to meet crop nutrient requirements and to protect waters of the state. These funds may also be used to increase inspection activities in watersheds, including those areas with impaired surface or ground water impairment...

3. IDENTIFICATION OF ISSUES and STRATEGIES

In reviewing and assessing the manure management program as directed by the proviso, WSDA looked at the DNMP and also at the larger picture of manure management in Washington. Consideration of partner agencies (See Appendix B) and input from the Dairy Nutrient Advisory Committee (see Appendix E) helped broaden WSDA’s perspective as it considered what and how issues need to be addressed to ensure the effectiveness of efforts to protect water quality from manure while also supporting a viable dairy industry, and more broadly, all of animal agriculture, in Washington.

From the Proviso

...The department in consultation with interested stakeholders shall identify gaps in the manure management program, including existing rules and statutory language, and report on a strategy to address those gaps...

The table below provides a summary; discussion follows.

Issue	Strategies to Consider	REQUIRES...		
		Statutory change	Rule change	Funding for...
A. Off-Site Dairy Manure Management				
A1. Manure from dairies does not have to be managed to the same standard when exported off the dairy farm as it does when managed on the dairy farm.	Hold all users of manure to the same standard.	X		X
	Require training, testing and certification of land applicators of manure (dairy, non-dairy, or custom applicators).	X		X
B Penalties				
B1 Existing dairy penalties are not consistent and are not necessarily meaningful or a deterrent to violation.	Review penalty matrix for appropriateness and effectiveness. Revise if needed.		X	WSDA
	Conduct annual review of penalties applied to gauge appropriateness and impact.			
C. Nutrient Management Plans (NMPs)				
C1 There is no penalty for failure to follow or update an NMP.	Require NMP updates at least every 5 years and prior to operation expansion.	X		CD
C2 NMPs are not easy to use or apply.	Revise the planning requirements to create an easier-to-use tool.			WSCC
C3 Lack of adequate resources for preparing and certifying NMPs.	Adequately fund conservation districts.			CD

D. Tools, Training and Technical Assistance				
D1	Lack of adequate tools for on-site decision making about manure applications.	Fund development of decision-making tools that use real-time data.		X
D2	Lack of adequate resources for training and technical assistance.	Adequately fund conservation districts and the Conservation Commission.		CD WSSC

A. Off-Site Dairy Manure

Due to the large amounts generated, manure from dairies often ends up being applied not only on-site but also on other farms, sometimes by that other farmer, and sometimes by a commercial applicator. Commercial applicators collect manure from dairy farms, then apply it for their non-dairy clients.

When properly managed, land application of manure is an important source of plant nutrients and soil enriching fiber to support growth of crops. Washington’s important organic agricultural industry relies heavily on use of manure as a primary source of nutrients.

However, when improperly land application of manure can result in transmission of bacterial and viral organisms, including pathogens, to our streams rivers and other waterways creating water quality problems that can adversely affect aquatic recreation, shellfish beds, and drinking water sources.

While it is acknowledged that synthetic fertilizers, when misused, are also a source of nutrients that can result in water quality problems, such as elevated ground water nitrate levels, the primary focus of WSDA’s approach to improving its Dairy Nutrient Management Program is to address the potential for transmission of biological contaminants.

A1 Manure from dairies does not have to be managed to the same standard off the dairy farm as it does on the dairy farm.

The authority for regulating manure is divided. WSDA’s jurisdiction includes land applications on dairies, but Ecology has the enforcement authority for commercial or other non-dairy land applications of manure. As a result, a dairy farm that includes berry fields in its nutrient management strategy is required to follow one set of rules for applying and documenting manure, while a non-dairy livestock operation that generates manure or a berry farm with no cows that uses manure on its berry fields follows another set of rules. Also, inspections are different. Dairies are routinely inspected. Livestock operations without a Confined Animal Feeding Operation (CAFO) National Pollutant Discharge Elimination System (NPDES) permits are not routinely inspected; crop farms

that use manure are not inspected, and neither type is required to maintain land application records. There is potential that the same manure management practice, which poses the same potential to pollute, would be handled differently under the law, depending on the type of operation generating or using the manure.

STRATEGIES TO CONSIDER:

- **Continued funding for voluntary education programs and training for manure users regarding best practices for manure application.**

Risk can be reduced through voluntary training and certification, though perhaps not as consistently or assuredly. This strategy would require resources to fully develop and implement a voluntary manure applicator training program. Train-the-trainer programs have been successful and very well received in other areas of the agriculture industry and may prove to efficiently reach the maximum number of manure applicators. The high-level of participation in the training events by both dairy producers and other manure users that were made possible by dollars allocated from the legislature illustrate the high-demand for this type of education.

- **Create parity amongst all manure users.**

Due to the varied nature of agriculture and where and how manure and other nutrients are generated, stored, transported and applied, some variation in regulation can be expected. However, when agricultural operators are subject to different regulatory requirements, there can be a lack of regulatory parity and inconsistency in water quality protection.

Holding all manure users to the same standard recognizes that risk to water quality comes with the application of manure, regardless of who applies it. It creates both parity and clarity as to what is required. This approach would require close coordination with effected agencies and potentially statutory changes.

- **Require training, testing and certification of land applicators of manure (dairy, non-dairy, third-party, or custom applicators).**

Required training and certification of all manure applicators reduces the risk of inappropriate applications, protecting water quality and reducing liability risks to farmers for the actions of commercial applicators acting as their agents. When

considering changes in regulations for off-site manure use, thoughtful attention must be given as to not discourage manure use by non-dairy farmers, as this is an important tool in manure management. This strategy would require the development of a new program and therefore would need additional resources.

Requires: Statutory changes. Funding for training and certification process. Coordination between WSDA and Ecology.

B. Penalties

While the vast majority of dairies are in compliance with the Dairy Nutrient Management Act, there are circumstances when penalties due to violations need to be assessed. WSDA's regulatory focus is on addressing willful and negligent violations, and repeat violations that reflect poorly on the dairy industry as a whole.

Currently, the State has limited enforcement authority except where dairy actions cause a discharge or create a potential to pollute. WSDA can issue a Notice of Correction for potential to pollute, which carry no penalties. WSDA can impose penalties only as allowed by the Dairy Nutrient Management Act (RCW 90.64). The statute narrowly defines what a violation is and establishes specific penalties for violations:

- Causing a discharge—civil penalty up to \$10,000 per day (RCW 90.48.144).
- Failure to obtain an approved and certified initial plan— civil penalty of \$100 per month past due date (RCW 90.64.030).
- Records violation added in 2009—penalty established in 2010 for up to \$5,000 per violation and maximum of \$5,000 in one year.

The over-application of nutrients or land applications under risky conditions is not subject to penalty unless a discharge is also documented.

The statute gives WSDA some flexibility in assessing certain penalties. The penalty matrix for discharge and recordkeeping violations was set in Chapter 16-611 WAC in November 2012. All monetary penalties levied for violations of the Dairy Nutrient Management Act are deposited into the Livestock Nutrient Management Account. Expenditures from this account can only be used for education and research grants that assist livestock operations in achieving compliance with state and federal water quality laws and such funds are not used to support day-to-day operations of WSDA.

B1 Existing dairy penalties are not consistent and are not necessarily meaningful or a deterrent to violation.

There has been some concern expressed that there is too much flexibility in assessing penalties, creating potential for inconsistent application of the law, or that the current

penalty schedules are too lenient, particularly for deliberate, negligent or repeat offenses. As a result, the possibility has been raised that the penalties may not be a deterrent, but instead could be considered the “cost of doing business” for some who are willing to risk it.

STRATEGIES TO CONSIDER:

- **Review penalty matrix and enforcement actions for appropriateness and effectiveness. Revise if needed.**
- **Conduct annual industry review of penalties applied to gauge appropriateness and impact.**

WSDA is scheduled to review the Chapter 16-611 WAC, including the penalty matrix, in fall 2017. WSDA intends to examine past application of penalties and potential future scenarios to help determine if intent to violate the law and the level of damage caused are adequately addressed in the current penalty matrix. Clarifying guidance in the WAC can help assure penalties are equitably assessed. Annual review of how penalties were applied can increase transparency and provide opportunity for feedback on penalty equity and effectiveness.

Requires: Possible rule and statutory change and creation of a penalty review group.

C. Nutrient Management Plans

Every licensed dairy farm is required by law (Chapter 90.64 RCW) to have a Nutrient Management Plan (NMP). NMPs identify potential pollution sources, water quality protection needs, and how those needs will be addressed. The Washington State Conservation Commission (WSCC) sets minimum elements of dairy plans based on federal Natural Resource Conservation Service (NRCS) standards. The WSCC also defines the plan format. Additionally, Ecology’s new CAFO permit requires operators to have a manure management plan.

Newly licensed Grade A milk producers are required to have an approved NMP on site within 6 months of licensing and a certified NMP on site within 2 years of licensing.

- Approved means the local conservation district has determined that the operation's plan to manage nutrients meets all the elements identified on a checklist established by the Washington Conservation Commission.
- Certified means the local conservation district has determined all plan elements are in place and are being implemented as described in the plan. For the plan to be certified, both the dairy operator and an authorized representative of the local conservation district must sign it.

Though Nutrient Management Plans (NMPs) can be an effective tool for protecting water quality, that effectiveness is currently limited by a lack of enforcement authority, penalties and resources.

C1 There is no penalty for failure to follow or update an NMP.

For an NMP to be certified as required, the elements described in the plan must be “being used as designed and intended,” but there is no requirement that the plan be implemented once it is certified. The statute (Chapter 90.64 RCW) includes monitoring development and implementation of NMPs as a purpose for inspections, and it identifies the existence and implementation of NMP as criteria for prioritizing inspections, but not following an NMP is in itself not a violation of the statute, and there is no penalty for it.

Also, facility infrastructure and on-farm management practices change, and land application acreage are often traded with other farmers, but NMPs are not required to be updated to reflect those changes. Expanded operations, reconfigured facilities and even changing weather patterns may affect a plan’s effectiveness. An NMP that was effective for protecting water quality 5 years ago may not be effective today. Currently, a dairy is not required to update its NMP even if there are substantial changes in the operation. The statute only requires a plan to be updated *after* a discharge violation has occurred--if there is a discharge and the plan did not prevent it. However, there is no penalty for not updating it, even after a discharge.

STRATEGY TO CONSIDER:

Require NMPs to be updated every 5 years and prior to operation expansion.

Updating NMPs regularly keeps them more useful. The plans and farm conditions are more likely to be in synch, and the repeated process keeps attention on the plan. Updated plans will have to be implemented in order to be re-certified. Updating the NMP ahead of an expansion allows water quality protection measures to be integrated into the process of expansion, rather than be added on later, which could be more costly. It also reduces the risk of an operation having a discharge violation due to its expansion.

However, updating and recertifying a plan every five years does not guarantee that the plan will be implemented between updates. Also the updates can be expected to significantly increase demands on conservation district resources. See C3, below. Prioritizing new plans and updates may become an issue. Some dairies may feel their opportunity to expand is impeded by the inability to get their NMP updated.

Requires: Statutory changes. Funding for conservation districts.

C2 NMPs are not easy to use or apply.

Nutrient Management Plans are important for identifying measures to be taken to protect water quality, but the NMP is not designed to be a tool for day-to-day decisions in the field. The Nutrient Management Plan requirements (elements and format) have not been updated since 1988 and they can be large, unwieldy documents.

A tool that is not easy to use may not be used correctly. To ensure NMPs are implemented as intended to effectively protect water quality, farmers need to be able to easily determine how to apply the plan. They need a clear path for compliance.

STRATEGY TO CONSIDER:

Revise the planning requirements to create an easier-to-use tool.

The NMP format could be streamlined or summary version of the plan added to the existing required format. The summary could become a tool for farmers and applicators to follow as they make day-to-day decisions in the field.

A model using a summary of the plan already exists in the Whatcom Conservation District's current NMP format. Whatcom Conservation District has also developed tools that help all manure applicators west of the Cascade Mountains make decisions about when and where to make manure applications called the Application Risk Management (ARM) and Manure Spreading Advisory (MSA). These tools are web-based and provide documentation of the decision making process as to when and where manure can be applied. They are being used by several dairies west of the cascades.

These tools could be part of the NMP requirements in locations where they are appropriate and available. Currently, application of these tools are not available in eastern Washington. Additional tools could be developed that are appropriate in the drier locations of the state to address protecting ground water sources.

A more streamlined product, easier process and more coordination with the agencies involved could help ensure NMPs are better integrated to meet each dairy operator's needs.

However, during the period of transition to new a format, some farmers have may have the advantage of being able to use it before others do. Also, a streamlined version still needs to be thorough enough to do the job, and using a summary version on a regular basis may make the fuller version of the plan seem unnecessary. Care will have to be taken to ensure the function of the NMP is not hampered.

Requires: Commitment from and funding for the State Conservation Commission.
Coordination between regulatory agencies.

C3 Lack of adequate resources for preparing and certifying NMPS.

Farmers often have to rely on conservation districts to develop their plans. But due to limited resources, the districts may not be able to help. The statute itself acknowledges this dilemma:

RCW 90.64.026 (10) The ability of dairy producers to comply with the planning requirements of this chapter depends, in many cases, on the availability of federal and state funding to support technical assistance provided by local conservation districts. Dairy producers shall not be held responsible for noncompliance with the planning requirements of this chapter if conservation districts are unable to perform their duties under this chapter because of insufficient funding.

In other words, operators are not required to meet NMP timelines if the local conservation district does not have resources to help them prepare and certify their plans. However, even without an NMP in place, dairies are still held to the water quality protection requirements.

STRATEGY TO CONSIDER:

Adequately fund conservation districts.

The effectiveness of the Dairy Nutrient Management Act relies heavily on the planning and technical assistance that conservation districts can offer dairy farmers. By adequately funding the districts to do the work assigned to them, dairy farmers can get the support they need to comply with the planning requirements and have plans that help protect water quality

Farmers are not required to use conservation districts to develop their plans, only to approve and certify them. Increased funding for the districts may take business from private farm consultants.

Requires: Funding for conservation districts.

D. Tools, Training and Technical Assistance

Tools, training and technical assistance can help dairy farmers and others better comply with manure management and water quality regulations. Operators need to know what's expected of them and how to successfully incorporate requirements into their operations. The response to the training events offered under the 2015-2017 grants shows there is both a need and interest. (See Section 4 - Training Efforts and Results.) The Dairy Nutrient Management Act itself recognizes the importance of technical assistance, incorporating it into the duties of the conservation districts.

Having ongoing opportunities allows both new operators to get training and assistance on protecting water quality, and experienced operators to refresh their knowledge. It may also reduce the need for more time-consuming one-on-one technical assistance. Technical developments or regulatory changes can create the need for new training, tools and outreach.

For example, with recent changes to the CAFO permit, affected dairies will need assistance in understanding new requirements and incorporating them into their NMPs. Also, farmers using manure on food crops will need clarity to meet state water quality requirements and new federal produce rules under the Food Safety Modernization Act.

D1 Lack of adequate tools for on-site decision making.

Farmers and applicators need to operate both effectively and efficiently. It's important to know where the real problem is and where to allocate resources so they will do the most good to protect water quality. However, it's difficult to make the best decisions unless you can incorporate current conditions into the decision-making process. And it's harder yet when those conditions change day to day.

STRATEGY TO CONSIDER:

Fund development of decision-making tools that use real-time data.

Having real-time data will let farmers and applicators make decisions based on actual conditions, not just estimates.

Additional tools to understand impacts from feed management and mineralization of organic matter in the soil profile are currently being developed by WSU but will require additional funding to maintain decision-making tools that use real-time data and for conducting education events to encourage implementation and on-going use of the tools on the farm. Retaining the ability to remain nimble when new technologies come online.

Requires: Funding.

D2 Lack of adequate resources for training and technical assistance.

The ESSB 6052 appropriation for training in agronomic application of manure expires on June 30, 2017. Training is not likely to continue unless other funding is provided, despite the need and interest.

STRATEGY TO CONSIDER:

Adequately fund conservation districts and the State Conservation Commission.

Districts need the resources to continue providing technical assistance in various ways, including training and NMP development. The Commission needs the resources to support the districts in their efforts.

Requires: Funding for conservation districts and the State Conservation Commission.

APPENDICES

A. The Proviso

B. WSDA and Ecology Authorities and Roles

C. Training Events 2015-2017

D. Outreach and Technical Assistance 2015-2017

E. Dairy Nutrient Advisory Committee

Appendix A

The Proviso

Engrossed Substitute Senate Bill 6052, Chapter 4, Laws of 2015, Section 309(3) (page 120-1),

\$575,000 of the state toxics control account—state appropriation is provided solely to implement a nutrient management training program for farmers that provides training in agronomic application of dairy nutrients, as defined in RCW 90.64.010. The department shall develop an accreditation process to track completion of training by individuals who apply manure. The department shall also offer to willing farms to review agronomic application of dairy nutrients, as defined in RCW 90.64.010, used in crop production, including when, where, and how much manure to apply to meet crop nutrient requirements and to protect waters of the state. These funds may also be used to increase inspection activities in watersheds, including those areas with impaired surface or ground water impairment. The department in consultation with interested stakeholders shall identify gaps in the manure management program, including existing rules and statutory language, and report on a strategy to address those gaps. This program shall be a two-year pilot and the department shall report to the governor and the legislature by December 31, 2015, June 30, 2016, and on June 30, 2017, on the level of participation and results of the program. In developing the curriculum for agronomic education and certification programs, the department will provide opportunity for input from interested parties including: Washington State University, state conservation commission, department of ecology, conservation district staff, and representatives from agricultural, livestock, and crop organizations, environmental organizations, tribal government representatives, and certified crop advisers.

Appendix B

Agency Roles and Authorities

WSDA's Dairy Nutrient Management Program (DNMP) is a water quality program working to ensure Washington dairies comply with state and federal water quality laws. Under Chapter 90.64 RCW, the DNMP is responsible for:

- Registering dairy farms. Just under 400 cow dairies across the state are registered.²
- Inspecting dairy farms for existing or potential water quality problems. Dairy farms are inspected at a minimum approximately every 22 months. About 450 inspections are conducted each year—200 are routine; the rest are in response to complaints, incidents, and enforcement actions.
- Responding to complaints about discharge of pollutants from dairy farms. DNMP investigates complaints from the public or from other agencies.
- Determining if a dairy-related water quality problem requires immediate corrective action. This is priority work. DNMP must respond within 3 business days; its goal is to respond in 1.
- Monitoring implementation of dairy nutrient management plans (NMPs). Dairies must have an approved NMP within 6 months of licensing and a certified NMP within 2 years of licensing.
- Working cooperatively with conservation districts. DNMP inspectors refer dairies to local conservation districts for technical assistance.
- Administering and enforcing NPDES CAFO permits as appropriate. WSDA coordinates with Ecology, see below.

The DNMP is only one piece of the framework for protecting water quality from manure. Other agencies also play key roles.

U.S. Environmental Protection Agency (EPA) administers the Federal Clean Water Act and requires concentrated animal feeding operations (CAFOs) to hold a National Pollutant Discharge Elimination System (NPDES) permit (a.k.a. CAFO permits). EPA also provides regulatory oversight for all tribal dairies and feedlots in Washington State.

Washington State Department of Ecology (Ecology) enforces state water quality requirements and also federal requirements for EPA. Ecology administers, develops, and processes CAFO permits for all livestock operations, including qualifying dairies. The DNMP coordinates with the Ecology on the regulation of those dairies and other CAFOs that hold NPDES permits. (See also Appendix B.)

² In 1998, approximately 1500 dairies operated in Washington State. By 2003, there were just under 600. However, animal numbers have remained nearly the same. Regulatory requirements and industry economics resulted in consolidation, so although farms numbers began to decrease, farm size increased.

Conservation Districts provide technical assistance to dairy producers, helping them develop and implement dairy nutrient management plans. The districts also review, approve, and certify dairy nutrient management plans that meet the minimum standards.

Washington State Conservation Commission supports and guides the conservation districts. It develops the requirements for dairy NMPs and oversees the review, approval, and certification process.

WSDA and Ecology Authorities

LIVESTOCK/MANURE	ROUTINE INSPECTIONS	COMPLAINT RESPONSES	INFORMAL ENFORCEMENT	FORMAL ENFORCEMENT	CAFO PERMIT ADMINISTRATION
Non-permitted dairies <i>WSDA Lead, Chapter 90.64 RCW</i>	WSDA	WSDA	WSDA	WSDA <i>If discharge, coordinate per MOU</i>	Ecology <i>Determines if permit is required per MOU</i>
Permitted dairy and non-dairy CAFOs <i>Ecology Lead, Chapter 90.48 RCW</i>	WSDA Lead <i>Established by MOU</i>	WSDA Lead <i>Established by MOU</i>	WSDA Lead <i>Established by MOU</i>	Ecology <i>Both agencies coordinate per MOU</i>	Ecology ³ <i>WSDA assists to implement per MOU</i>
Non-permitted non-dairy AFOs and CAFOs <i>Ecology Lead, Chapter 90.48 RCW</i>	N/A	WSDA - <i>If resources available per MOU</i> Or referred to Ecology	WSDA - <i>If resources available per MOU</i> Or referred to Ecology	Ecology	Ecology
Non-AFOs - Pasture, Rangeland or Small Livestock <i>Ecology Lead, Chapter 90.48 RCW</i>	N/A	Ecology	Ecology	Ecology	N/A
Manure complaints when the responsible party is uncertain <i>WSDA lead for initial response if available and to determine if dairy is responsible per MOU</i>	<p style="text-align: center;">WSDA handles follow up if dairy is responsible</p> <p style="text-align: center;">Ecology may handle follow up with any non-dairy livestock operation or land applicator</p>				

Permit = National Pollutions Discharge Elimination System permit

³ Through MOU WSDA may provide comments on nutrient management plans and annual reports when requested by Ecology

Definitions

<p>Dairy Farm RCW 90.64.010</p>	<p>A farm that is licensed to producer milk under chapter 16.35 RCW.</p>
<p>Animal Feeding Operation (AFO) RCW 90.64.010</p>	<p>Animals that have been, are, or will be stabled or confined and fed for a total of forty-five days or more in any twelve-month period (does not have to be consecutive; and Crops, vegetation forage growth, or postharvest residues are not sustained in the normal growing season over any portion of the lot or facility. Two or more animal feeding operations under common ownership are considered, for the purposes of this chapter, to be a single dairy animal feeding operation if they adjoin each other or if they use a common area for land application of wastes.</p>
<p>Concentrated Animal Feeding Operation (CAFO) – defined RCW 90.64.010</p>	<p>Animal feeding operation subject to regulation under this chapter which the director designates under RCW 90.64.020 or meets the following criteria:</p> <ul style="list-style-type: none"> (a) Has more than seven hundred mature dairy cows, whether milked or dry cows, that are confined; or (b) Has more than two hundred head of mature dairy cattle, whether milked or dry cows, that are confined and either: <ul style="list-style-type: none"> (i) From which pollutants are discharged into navigable waters through a man-made ditch, flushing system, or other similar man-made device; or (ii) From which pollutants are discharged directly into surface or ground waters of the state that originate outside of and pass over, across, or through the facility or otherwise come into direct contact with the animals confined in the operation.
<p>Concentrated Animal Feeding Operation (CAFO) – permitted RCW 90.64.020</p>	<p>(1) The director of the department of ecology may designate any dairy animal feeding operation as a concentrated dairy animal feeding operation upon determining that it is a significant contributor of pollution to the surface or ground waters of the state. In making this designation the director shall consider the following factors:</p> <ul style="list-style-type: none"> (a) The size of the animal feeding operation and the amount of wastes reaching waters of the state; (b) The location of the animal feeding operation relative to waters of the state; (c) The means of conveyance of animal wastes and process waters into the waters of the state; (d) The slope, vegetation, rainfall, and other factors affecting the likelihood or frequency of discharge of animal wastes and process waste waters into the waters of the state; and (e) Other relevant factors as established by the department by rule. <p>(2) A notice of intent to apply for a permit shall not be required from a concentrated dairy animal feeding operation designated under this section until the director has conducted an on-site inspection of the operation and determined that the operation should and could be regulated under the permit program.</p>

Appendix C

Training Events 2015-2017

Contract ID	Session Name	Session Sponsor	Session Date	No. of Attendees
K1838	Implementation of a Nutrient Management Training Curriculum for Manure Users	Whatcom CD	27-Jan-16	81
K1839	Manure Application Training Series - Applicator Training	Pierce CD	6-Feb-16	13
K1838	Implementation of a Nutrient Management Training Curriculum for Manure Users	King CD	10-Feb-16	51
K1838	Implementation of a Nutrient Management Training Curriculum for Manure Users	Snohomish CD	11-Feb-16	47
K1839	Manure Application Training Series - Changing Rein Farm Tour	Pierce CD	23-Feb-16	11
K1840	Manure Exchange Education Program - Blueberry Workshop	Mason CD	27-Feb-16	32
K1840	Manure Exchange Education Program - Mud & Manure Solutions Workshop	Mason CD	13-Mar-16	17
K1890	Manure Nutrient Application Workshop For Agricultural Producers	South Yakima CD	16-Mar-16	31
K1839	Manure Application Training Series - Pasture Workshop , Ruff Farm	Pierce CD	20-Apr-16	12
K1838	Discover Soils and Manure Tour Field Day- Whatcom	Whatcom CD	26-Apr-16	20
K1838	Discover Soils Field Day- Enumclaw	Whatcom CD	28-Apr-16	10
K1838	Discover Soil- Snohomish (Stanwood)	Whatcom CD	3-May-16	13
K1839	Manure Application Training Series -Manure Spreader Demonstration	Pierce CD	15-May-16	9
K1840	Manure Composting Workshop- with Andy Bary	Mason CD	18-Jun-16	23
K1896	Managing Manure and Water Quality Concerns on Farms in Southwest Swede Hall - Classroom	Thurston CD	24-Jun-16	6
K1896	Managing Manure and Water Quality Concerns on Farms in Southwest Tenino Ranch- Field	Thurston CD	27-Jun-16	3
K1896	Manure Management Short Course Sharon Grange Classroom	Grays Harbor CD	28-Jun-16	6
K1896	Manure Management Short Course Austin Dairy- Field	Grays Harbor CD	30-Jun-16	5
	WA Dairy Federation Booth & Education	WSDA/DNMP	8-Nov-16	51

Contract ID	Session Name	Session Sponsor	Session Date	No. of Attendees
K2025	Nutrient Management Training (for farmers, applicators and consultants) 2 workshops (Prosser & Kennewick)	WSU- Pullman/Prosser	12-Dec-16	28
K2017	Implementation of a 2017 Nutrient Management Training Curriculum for Manure Users in the Puget Sound	Whatcom CD	12-Jan-17	100
K2017	Implementation of a 2017 Nutrient Management Training Curriculum for Manure Users in the Puget Sound	Skagit/Snohomish CD	31-Jan-17	62
K2017	Implementation of a 2017 Nutrient Management Training Curriculum for Manure Users in the Puget Sound	King/Pierce CD	1-Feb-17	35
K2083	NM Training - Soil Health	South Yakima CD/GS Long	1-Feb-17	28
K2031	BioFiltro - Sunnyside	Organix	12-15-2016	32
K2074	Grays Harbor Manure Education - Classroom	Grays Harbor CD	By June 2017	
K1892	Tools for Actively Adapting your Nutrient Management Plan 4 workshops and 2 field days	WSU-Puyallup	By June 2017	
K2021	Nutrient Management Education 1 workshop and 1 field day	Underwood CD	By June 2017	
K2030	Integrated Feed Management into Whole Farm Nutrient Management	WSU- Puyallup/Prosser	By June 2017	
K2030	Integrated Feed Management into Whole Farm Nutrient Management	WSU- Puyallup/Prosser	By June 2017	
K2109	Mud & Manure Workshops 2017	Mason County CD	By June 2017	
			Total Attendance to date	726

Appendix D

Outreach and Technical Assistance 2015-2017

With the addition of two new inspectors temporarily funded by the ESSB 6052 appropriation, the WSDA Dairy Nutrient Management Program (DNMP) was able to increase its outreach and response to technical assistance requests. Key efforts include:

- Field walks so producers can talk with inspectors about preferential pathways existing in individual fields and management practices that could be used by the land applicators of manure to protect surface water quality.
- Work with the Whatcom Conservation District to develop a document for producers and the public to explain agronomic application of nutrients, and provide links to additional information.
- Work on additional activities and tools to help all agricultural producers use all nutrient sources to meet agronomic rates, maximize production, and protect Washington's waters.
- Taking opportunities to discuss manure storage and utilization management practices with all agricultural producers who use manure, regardless of whether they have a dairy or not

Having the additional inspection staff also increased DNMP's capacity in general, allowing the program to develop and advance some tools that will help dairies come into and remain in compliance:

- GIS mapping to track water quality sampling, land applications and lagoon locations. These maps are shared with producers to help raise awareness of management practices that may need to be modified in order to protect Washington's waters. DNMP uses the maps to educate Producers about what story a GIS-satellite picture tells, what their land application records tells about when and where they are applying manure and what the fecal levels are in their neighborhood.
- Sharing results from water quality sampling as close to real-time as possible. On-line maps have been available since January 2016 and provide the water quality results within a few days of sampling. The information allows producers to evaluate how the practices they are implementing could be affecting water quality.
- The inspection input form for evaluating lagoon operation and maintenance at all dairies in the Yakima Valley, utilizing the Natural Resource Conservation Service (NRCS) Engineering Technical Note 23 – *Risk Assessment Procedure for Existing Waste Storage Pond (WSP)*. The DNMP was able to complete the form for about 80% of the lagoons in Yakima County; the local conservation district field tested the inspection portion that covers compliance with NRCS practice standards and plans to use it with dairies that will

be covered under a CAFO permit—the permit requires a Tech Note 23-inspection within the first 24 months of operation. Results were shared with individual dairies, local conservation district and NRCS for additional assessments by engineering staff. DNMP producer follow-up regarding management practices is pending completed results of the assessments.

Appendix E

Dairy Nutrient Advisory Committee

In June of 2016, the Director of the Department Agriculture, Derek Sandison, invited a broad cross-section of stakeholders to participate in the Dairy Nutrient Advisory Committee (DNAC) to help identify operational improvements to WSDA’s Dairy Nutrient Management Program (DNMP).

The intent was (and is) to gather diverse ideas that could be harnessed to ensure the DNMP can function optimally within its scope of work, and to be transparent in the process, letting the committee see the inner workings of this public-service program. Each member’s unique perspective is important to both the group and the larger effort to review the program while simultaneously promoting a viable dairy industry and resource sustainability.

DNAC MEMBER	AFFILIATION
Lynn Bahrych	Washington Conservation Commission
Heather Bartlett	Washington State Department of Ecology
Laurie Crowe	South Yakima Conservation District
Scott Berbells	Washington State Department of Health
Tom DeVries	DeVries Family Farm
Bill Dewey	Taylor Shellfish
Lucy Edmondson	U.S. Environmental Protection Agency
Nichole Embertson	Whatcom Conservation District
Tracy Hanger	U.S. Department of Agriculture
Karla Heinitz	WA State Conservation Commission
Randy Honcoop	Randy Honcoop Farms
Chad Kruger	Washington State Universtiy
Larry Stap	Twinbrook Creamery
Dean Wesen	Wesen Organic Dairy
Daryl Williams	Tulalip Tribe
Also invited: Washington Environmental Council, The Nature Conservancy and the Yakima Nation.	

The DNAC met with Director Sandison six times between September 2016 and March 2017, considering several subject areas related to the DNMP’s work: policy, natural resources, funding, operational, and relationships/roles. Materials generated by the committee follow. (Note: Some ideas from the committee echo measures DNMP already has put in place.)

The DNAC is anticipated to continue meeting to provide ongoing input to and a sounding board for the Director on dairy nutrient management.

DNAC Work Sheet

CATEGORIES and Sub-Items for consideration.

POLICY	NATURAL RESOURCES	FUNDING	OPERATIONAL	RELATIONSHIP/ ROLES
Decision supported robust monitoring and management system.	Third party export of nutrients.	Funding to support Dairy planning and adaptation of those plans.	Better guidance on how to deal with referrals and reports.	Every citizen understands the DNMP.
WSDA violation embedded within the statute. Stronger enforcement authority.	Emergency manure management/lagoon capacity.		Capacity for routine inspections.	Every producer needs to understand what is going on.
Are the current penalty amounts sufficient?	Planning for climate change resiliency.		Program adequately address custom manure applicators.	Clear roles and responsibilities among the entities working on this program. More clear communication.
Are there any other deficiencies occurring that are higher risk that are contributing to public health issues that WSDA or DOH needs authority for?	Lagoon storage.		Insufficient info available to assess lagoon leakage.	Transparency of what goes on.
	Non agronomic application could potentially get missed. More robust soil sampling. Tolerance levels of what is okay.		Updating elements of a farm plan.	
	Nitrogen & Phosphorus			

DRAFT WORKSHEET – DNAC RECOMMENDATIONS 3/8/17
Recommendations numbered consecutively through categories

POLICY CATEGORY

POLICY Sub-item	Why was this identified as a concern/opportunity?	What does it look like when it is working properly?	Recommendation on how we are going to get there.
Decisions supported by robust, coordinated monitoring and management system.	<ul style="list-style-type: none"> ▪ Do we know that the planning and inspection process was resulting in reduction in impairments to water quality? 	<ul style="list-style-type: none"> ▪ Coordinated monitoring would provide needed information regarding needed changes in implementation, types of practices for achieving water quality ▪ would provide information on source identification so that we can address the source of the problem (bracketing) ▪ Information would be disseminated to agencies and public (e.g. Samish) 	<ol style="list-style-type: none"> 1. Recommend review, assessment, coordination of water quality (surface & groundwater) monitoring activities, protocol, and data related to dairy nutrients and other sources to get to what the problem really is (narrow to areas of need through source tracking) (acknowledging that surface vs ground water and type of pollutant creates a different degree of challenge in implementation) 2. Development of an Agreement between agencies that are doing water quality monitoring 3. Use data to identify watershed areas to provide assistance and better coordination of resources
Clarity around sequencing enforcement actions	<ul style="list-style-type: none"> ▪ Subjectivity moving from one step to the next step in the process ▪ Implementation of Nutrient management plans not enforceable in statute 	<ul style="list-style-type: none"> ▪ Clear definition of when a producer goes from technical assistance to penalties and range of penalties for what violation ▪ Producers are voluntarily implementing the DNMPs with a backdrop of regulation needed ▪ The price is right for the polluting act at the level of 	<ol style="list-style-type: none"> 4. Need clear guidance for regulatory staff and producers regarding steps and when they would be implemented – escalating and deescalating in enforcement action (less fuzzy judgement and when treatment is enough) 5. Publish the clear guidance in WA Administrative Code (WAC) with input from stakeholders and share with dairy producers for public comment

POLICY Sub-item	Why was this identified as a concern/opportunity?	What does it look like when it is working properly?	Recommendation on how we are going to get there.
		impairment	
Are the current penalty amounts sufficient?	<ul style="list-style-type: none"> ▪ Bad actors may not have sufficient penalties to make change ▪ Penalty may not always change behavior ▪ May have situations where damage is severe or deliberate enough to go to severe penalty immediately 	<ul style="list-style-type: none"> ▪ Penalties would elicit the behavior change ▪ Environmental impact considered in penalty scaling ▪ No unintended consequences 	<ol style="list-style-type: none"> 6. Look at other states on the range of penalties for consideration 7. Dept. of Ag assessments of whether there are behaviors not being changed with current penalties...distinction of bad actors vs majority in compliance 8. Look at Ecology data on water quality violations to compare to dairy violations and if the penalty system is a problem 9. Draft penalty system range and review with dairy producers for feedback...Penalty range needs to be based on the damage done because of intent and/or negligence, frequency of violations, and size of operation (note...may be difficult for committee to draft) 10. Penalty account could be used to help fix the violation 11. Once a year <u>peer</u> panel to review of WSDA all enforcement actions 12. In severe cases only, <u>peer</u> panel advise on if the license is pulled from the dairy in situations when all avenues have been exhausted (last resort - severe case only – ID example) 13. Template and guidance on media release on violation including working with dairy industry

POLICY Sub-item	Why was this identified as a concern/opportunity?	What does it look like when it is working properly?	Recommendation on how we are going to get there.
<p>Are there any other deficiencies occurring that are higher risk that are contributing to public health issues that WSDA or DOH needs authority for?</p>	<ul style="list-style-type: none"> ▪ Food safety considerations with transfer and use of manure with food crops ▪ Background levels of some contaminants need consideration...concentrate on reducing risk ▪ Understand legislation and Ecology WACs, guidance regarding organic materials within solid waste requirements and impacts on manure management ▪ Do other sources of nitrogen, nutrients need to be regulated? 	<ul style="list-style-type: none"> ▪ Food safety laws are known, and followed based on studies (over five years) 	<p>14. Encourage research on pathogen, bacteria, and biologicals survivability</p> <p>15. Where we have good information produce technical guides on organics and manure utilization and food safety</p>
<p>Dairy Operations rewarded and legally defended for environmental performance & compliance</p>	<ul style="list-style-type: none"> ▪ Dairy operations can be sued for poor water quality, can go to court and win...but cheaper to settle out of court ▪ WA State is an interesting place to file lawsuits on environmental issues ▪ Currently not a program to legally defend 	<ul style="list-style-type: none"> ▪ Qualified dairy operations would be protected from 3rd party lawsuits when in-compliance and implementing their dairy nutrient management plan and 	<p>16. A program to acknowledge and recognize dairy operations that step out above compliance – e.g. AGSTAR</p> <p>17. Legislation and permitting would mirror other states that would ensure legal protection of agriculture compliant farms</p>

NATURAL RESOURCES CATEGORY

NATURAL RESOURCES Sub-item	Why was this identified as a concern/opportunity?	What does it look like when it is working properly?	Recommendation on how we are going to get there.
Third party export of nutrients.	<ul style="list-style-type: none"> • Manure could be applied incorrectly and related water quality issues • Risk and responsibility of the producer • Lack of oversight and accountability 	<ul style="list-style-type: none"> • Manure needs to be applied properly • End user responsibility and accountability for proper usage and application • More opportunities for dairies for proper use • Accountability for where the manure goes 	<ol style="list-style-type: none"> 18. WSDA could lead a study on statewide volume of manure exported and number of end users...use existing data 19. Education programs for third party end users regarding best practices for manure application 20. Explore the implications of guidance for exporting manure to individuals receiving manure that have a nutrient management plan or guidance in place (w technical assistance or self-developed) 21. Need an emergency contact point for the dairy producer manure export to reduce dairy producers liability 22. Check with Ecology solid waste folks regarding existing bio-solids protocol if it could be modeled 23. Determine if legislative authority and related funding is needed through Ag for this gap
Applicators of manure under guidance of producer	<ul style="list-style-type: none"> • Custom applicators may not know best practices for manure application • Possible lack of knowledge of requirements / related risks of improper application • Amount of regulation • Time commitment for training, etc. 	<ul style="list-style-type: none"> • Proper application of manure throughout the state • Program that people would get their education and training they need for proper manure application • Land owner knows risk and holds accountability for proper manure application • Would have clarity on who is responsible for manure application • Producers would be using 	<ol style="list-style-type: none"> 24. Education programs for applicators, producers and custom applicators regarding best practices for manure application including web-based training with test at conclusion 25. Train-the-trainer programs for on farm tools and techniques for manure management 26. WSDA staff to check with states having existing licensing /certification programs existing (done) 27. Licensing or certification program developed for manure application (on-farm and contractors) 28. Dairy producers would need to enforce the proper application with their custom applicators

NATURAL RESOURCES Sub-item	Why was this identified as a concern/opportunity?	What does it look like when it is working properly?	Recommendation on how we are going to get there.
		applicators	
Emergency manure management/lagoon capacity.	<ul style="list-style-type: none"> Weather patterns changing...higher rainfall Need for more storage and management Land application in emergency situations 	<ul style="list-style-type: none"> Would have emergency storage capacity Opportunity for treatment to take out a quantity of manure, treat and lessen impact on resources Designed systems for emergency situations Would have a fund, resources to call on (trucks, etc) to deal with emergency 	<p>29. Each producer could do clean water assessments on their own dairies and invest in improvements to address known issues including the analysis of lagoon storage, cleanout, and alternatives such as lagoon covers (self analysis worksheet)</p> <p>30. Direct funding for increased storage facilities throughout State of WA</p> <p>31. Develop a system of cooperation between dairies for emergency situations – hot line available</p> <p>32. Continue research on treatment (affluent) and nutrient recovery systems (digester, etc)</p> <p>33. Develop user markets for manure use</p>
Lagoon storage.	<ul style="list-style-type: none"> Dairies expand and consequentially have a need for additional storage requirements 	<ul style="list-style-type: none"> Dairy producers would tie resource and facility needs when expanding operations Other economically feasible alternatives would be available to lagoon storage (upright tanks, digesters) 	<p>34. Updates to dairy nutrient management plans to be in place for operation before expansion</p> <p>35. Provide recommendations to cost share programs available for manure storage/use alternatives (concentration, separation)...NRCS, other</p> <p>36. Consider budget package to legislature for manure storage/use alternatives (consider perverse incentives to a subsidy)</p>
Consider climate change resiliency.	<ul style="list-style-type: none"> When we build the lagoons we must plan for the increases in precipitation, range of rainfall Anticipating growth and change in climate from models 	<ul style="list-style-type: none"> Planned for growth and operation based on models Producers considering climate change in planning as a possibility of change as a risk management tool 	<p>37. Producers could consider climate change in planning as a possibility of change as a risk management tool...provide metrics...WSDA encouraged</p>

NATURAL RESOURCES Sub-item	Why was this identified as a concern/opportunity?	What does it look like when it is working properly?	Recommendation on how we are going to get there.
Producers facing non agronomic application	<ul style="list-style-type: none"> • Ground water concerns from over application • Producers wanting to get lagoon levels down would do non-agronomic application of manure 	<ul style="list-style-type: none"> • Tolerance levels of what is okay • Good educated decisions about manure applications • More robust soil sampling • Tools to help decision making 	<p>38. Continue to use the current processes and tools used in the WSDA for field application and involvement/education with farmers</p> <p>39. On-line tool based on above techniques made available for producer use (dairy and nondairy)(eg ARM system)</p> <p>40. Bad actors held accountable for violations of current rules and regulations (thought to be a low percentage)</p>
Nitrogen & Phosphorus & Commercial nutrients considerations	<ul style="list-style-type: none"> • Communities currently faced with high levels of nitrogen and phosphorus in water – ground and surface • Over application of commercial fertilizer from past also has caused the nutrient issues • Pressure on producers to move in a negative direction regarding use of nutrient and pesticide 	<ul style="list-style-type: none"> • Compliance with current law in agronomic practices • Industry is improved by dealing with a few bad players • Commercial nutrients need to be considered in nutrient balance calculations 	<p>41. Strategic enforcement and utilize current WSDA compliance staff regarding situations needed reported on few bad players including follow-up action by WSDA</p> <p>42. Continue the development of a real-time feedback nutrient balance tool for producer use based on soil analysis, yield, rainfall, other...grant funding and research (WSU)</p> <p>43. An analysis of other sources of nutrients and management needing to be accounted for related to the bigger picture resource issues (beyond dairy)</p>
More transparency with the manure handling and pollution prevention plan	<ul style="list-style-type: none"> • Protection for being transparent with manure handling and pollution prevention plans • Lawsuits being launched 	<ul style="list-style-type: none"> • Transparency would deflate the will to have a law suit because everything would be in the open 	<p>44. WSDA, with partners, could develop a system for dairy nutrient management permitting that would protect producers and at the same time eliminate the will to bring third party lawsuits to get information; as well as defense by state and feds of operations following their permit (Oregon example and current permit system) (note: don't be redundant or contrary recommendations)</p> <p>45. EPA to assist with information on federal side of permitting system</p>

FUNDING CATEGORY

FUNDING Sub-item	Why was this identified as a concern/opportunity?	What does it look like when it is working properly?	Recommendation on how we are going to get there.
<p>Funding to support Dairy planning and adaptation of those plans.</p>	<ul style="list-style-type: none"> • No funding for planners to do dairy nutrient management planning work • Needing planners with dairy expertise • If we join permitting and inspection needing funding for WSDA • New CAFO permits will require staffing • Some producers may not be able to afford the type of useful year end reports such as N-3 example as related to management decisions 	<ul style="list-style-type: none"> • Have adequate and long term funding for Dairy Nutrient Management work including education programs, permitting, 3rd party export, inspections, technical assistance, and recommendations 	<p>46. Develop the funding needs analysis for adequate staffing for WSDA inspectors, Conservation District dairy planners, (consider dairy planners working on area basis)</p> <p>47. Compare current sources of funding at state, federal level to address funding needs, restrictions, gaps</p> <p>48. Identify and implement the streamlining of dairy nutrient management plan elements and tools use</p> <p>49. Develop a research needs analysis and related funding request (state, federal, private) e.g. WA Conservation Innovation Grant request</p>

OPERATIONAL CATEGORY

OPERATIONAL Sub-item	Why was this identified as a concern/opportunity?	What does it look like when it is working properly?	Recommendation on how we are going to get there.
Better guidance on how to deal with referrals and reports.	<ul style="list-style-type: none"> • Commission allocating funding to districts to provide key functions, and needs to know numbers of referrals (from inspectors to CD and Commission) are in “play” and how many resolved...lag between information and • Relates to legislative reports • Workload related to staffing at CDS 	<ul style="list-style-type: none"> • Producer has a completed plan, implemented practices • Key decision makers in Ag, Commission, CD would know status and needed action • Issues resolved related to the producer services • Build on the improves that have been made by WSDA to forward relevant referrals 	50. Process needing developed for direct information of referrals and status between WSCC and WSDA...re database available for decision makers...WSDA and WSCC lead to track process
Capacity for routine inspections.	<ul style="list-style-type: none"> • Time frame to do routine inspections by WSDA for following up with issue 	<ul style="list-style-type: none"> • Flexible with need to follow-up with dairies based on risk criteria and change frequency • 6, 12, 24 months follow-up on high, medium, low risk currently with food inspection • Technology based options used to help with routine inspections • Have enough staff to do routine inspections, with related retention of inspectors...relationship with producers 	51. Categorization system of dairy operations to low, medium, high risk criteria and base routine inspections on this risk analysis...model after food safety program

OPERATIONAL Sub-item	Why was this identified as a concern/opportunity?	What does it look like when it is working properly?	Recommendation on how we are going to get there.
<p>Insufficient info available to assess lagoon leakage.</p>	<ul style="list-style-type: none"> • Lawsuits have been launched • Ground water monitoring has indicated some situations of lagoon leakage • Difference in quantity and load is unknown...different than the seepage that is known • Perceived or real vulnerability of lagoons 	<ul style="list-style-type: none"> • Data would be available on leakage and seepage • What is moving through lagoon seal in seepage vs leakage • Treatment mechanisms known and applied • Seepage rate has been designed, calculated and known with liners and seal • Decision makers need a clear understanding of seepage, and what is unknown • NRCS Standards would be sufficient for addressing lagoon leakage concerns • Would be coordination among WSDA, Ecology and Health regarding risks to drinking water • Continue the testing of lagoon installations • Producer would understand and apply proper management with their lagoons...based on WSDA lagoon inspection • Good system of maintaining unused lagoons 'suitable' for emergency storage 	<p>52. WSDA continues to support lagoons planned, designed and producer maintained following NRCS Standards and Specifications</p> <p>53. WSDA continues to actively support the research in lagoon monitoring technology and use for evaluations</p> <p>54. Identify and implement improvements in the WSDA lagoon assessment protocol with appropriate partners</p>

OPERATIONAL Sub-item	Why was this identified as a concern/opportunity?	What does it look like when it is working properly?	Recommendation on how we are going to get there.
Updating elements of a Dairy Nutrient Management Plan.	<ul style="list-style-type: none"> • Not all plans not being compatible with other legally required plans • Too much focus on farm plan may distract from farm management • Some producers may not be able to afford the type of useful year end reports such as N-3 example as related to management decisions 	<ul style="list-style-type: none"> • Technical group of WSCC developing improvements in DNMP • Technicians have access to new technology, tools, plan elements for DNMP plans developed • Recognize producer is most interested in the report of inputs and results related to their operation...gallons on field...soil quality...results (report card concept)(...eg N-3 reporting synopsis 	<p>55. Every 5 years revisit the elements of the DNMP for applicability, producer use, plan updating, regional differences, new technology, new tools for plan development that would insure compatibility with other legally required plans</p> <p>56. Technicians and inspectors collect feedback and input from producers on applicability of plans, contents, value, technology, year-end reporting utility</p>
Guidance in RCW is not clear...lack of guidance or requirement for review, recertification and expiration of plan	<ul style="list-style-type: none"> • Once certified, no expiration of certification 	<ul style="list-style-type: none"> • Producers using plans that are current and utilized and in compliance • Producers would know process for certification, issues, and follow-up • Report card, regulatory changes, • could trigger a plan update 	<p>57. Examine the section of RCW for revisions needed to reflect real world situations, applicability, and DNAC recommendations, process for plan update and/or certification and recertification...WAC if needed (eg recertification every 5 years?)</p> <p>58. Pursue a change in 'process' with focus on year-end report card and related management changes...less focused on a 'plan' on more on consulting on annual basis</p>

OPERATIONAL Sub-item	Why was this identified as a concern/opportunity?	What does it look like when it is working properly?	Recommendation on how we are going to get there.
<p>Data collection or updated...requirements of program and relative success of program on impact on impairment of water quality (measurement) (Create certainty regarding the attribution of impairment) – protect land owner from law suits and misperception</p>	<ul style="list-style-type: none"> • More of an opportunity because of implementation of the dairy nutrient management program • Needing to tell the story about successes... connect the dots between the program and results of the program implementation • Some of population will not believe that the industry is doing things that address environmental challenges 	<ul style="list-style-type: none"> • Focus on what has been done and results on the environment from 1998. • More of the population would see the results of the program • DNMP and CAFO merged would provide the protection needed regarding following all permit requirements existing regulations to operate their dairy 	<p>59. Collect and use a combination of data to demonstrate the improvements based on program implementation</p> <p>60. Legislation to merge Dairy Nutrient Management Planning and CAFO requirements into legislation and WAC such that protection is provided (model after Oregon legislation and program)</p> <p>61. Support water quality and watershed work that based on monitoring with results oriented actions</p>

RELATIONSHIP/ROLES CATEGORY

RELATIONSHIP/ROLES Sub-item	Why was this identified as a concern/opportunity?	What does it look like when it is working properly?	Recommendation on how we are going to get there.
Key audiences that represent the public understand the DNMP and compliance process	<ul style="list-style-type: none"> • Because lack of understanding of what is required in the dairy industry • Questions from those that don't understand • Public responding to closures and spills 	<ul style="list-style-type: none"> • Key audiences knows and understand the DNMP and purpose of it clearly • Fewer complaints because people understand • Social media campaigns for education • Will be demonstrating a good report card • Water quality monitoring showing results • Key audiences identified...understand DNMP & inspection process 	62. Work with the dairy industry on communication strategies and methods related to citizen awareness of DNMP and dairy compliance...consider block grant for social media approach
Every producer needs to understand what is going on.	<ul style="list-style-type: none"> • Some producers not caring and/or engaged 	<ul style="list-style-type: none"> • Producers would know the gravity of related issues, concerns • High risk operations participating in education events 	63. Dairy producers working through their organizations to provide education and information programs with partner organizations 64. WSDA continue funding support for educational programs and activities 65. Require education for violating or high risk dairy producers as part of enforcement action
Clear roles and responsibilities among the entities working on this program. More clear communication.	<ul style="list-style-type: none"> • Because the RCW is vague in clarity of role especially within the WSCC 	<ul style="list-style-type: none"> • Things are streamlined...everyone fulfilling their role and responsibility 	66. Template of agreement developed and signed between entities in DNMP that clearly identifying role and responsibilities (WSDA, Ecology, WSCC, CDs, Health, other...unique to the county)

RELATIONSHIP/ROLES Sub-item	Why was this identified as a concern/opportunity?	What does it look like when it is working properly?	Recommendation on how we are going to get there.
Transparency of DNMP	<ul style="list-style-type: none"> Farm plans contents are not shared under current law 	<ul style="list-style-type: none"> People that would see what is in a plan would be less critical Transparency would reduce perception that there is a problem...but needs to have protection 	67. Educational campaign regarding what goes into a dairy plan targeted at key audiences (eg Yakima Regional Clean Air Agency – Dairy Air Quality Policy)
Risk management tool(s), research, technology adoption would be used more widely			68. WSDA could encourage WA State NRCS to issue WA Conservation Innovation Grants for DNMP 69. DNMP members and industry advocate to producers to use latest technology, risk management tool(s),
Effort on research needs and priorities...more clarity and direction regarding where land grant university provides information and research...update University guidelines...needing update crops information, etc...risk based management research	<ul style="list-style-type: none"> Because there is answers we need in dairy nutrient management Funding is needed for this effort Right now our land grant is a crop oriented research facility because of commissions and boards related 	<ul style="list-style-type: none"> Consistent source of funding to do this work, priorities established, publications on research (eg tree fruit industry) 	70. Encourage the funding for research including eliminating restriction on national dairy checkoff for research on nutrient management and use (work through WASDA & NASDA resolution process and national dairy organizations) 71. Coordinate DNMP member organizations to identify a listing of research priorities, outputs (eg extension publications on nutrient uptake, other)and related funding need to WSU and continue advocating for these needs 72. WSDA would make available block grant funding for a specific DNMP needs

RELATIONSHIP/ROLES Sub-item	Why was this identified as a concern/opportunity?	What does it look like when it is working properly?	Recommendation on how we are going to get there.
Legislature push for research and demonstration projects funding to move from nutrient management from waste to useful product	<ul style="list-style-type: none"> • Need more support for research and demonstration projects • Difficult to get funding from federal programs for this effort 	<ul style="list-style-type: none"> • Support and advocacy as good as tree fruit industry (similar economic impact) • Plan for research to overcome issues, identified need 	<p>73. Advocate for the need for research and demonstration projects funding to move from nutrient management from waste to useful product</p> <p>74. DNMP members develop partnerships for DNMP activities in a cooperative manner</p>