



Employing Collaboration and Innovation to Develop CWD Education and Outreach



**NOVEMBER 2019-MAY 2022
FINAL PROJECT REPORT**

Introduction

Since first detected in Michigan's deer populations in 2015, 228 deer have tested positive for chronic wasting disease (CWD) across ten Michigan counties. Without management and education, the spread of CWD in Michigan's deer could have broad negative impacts felt across the state and by a diverse set of stakeholders. While many organizations are researching how to deal with the disease, impacted stakeholders, including the public, need information about the disease and policies related to it that may affect them. To make sure that the information is timely, relevant, and useful, the Michigan Department of Natural Resources (MDNR) sought to co-create an education and outreach plan along with stakeholders through a unique process called a charrette.

A charrette is a series of workshops and meetings that engage all affected parties to develop a plan of action (Wondolleck & Yaffe, 2000). A steering committee that was representative of diverse stakeholder views was established to guide the entire process, including representatives from Farm Bureau, the Little Traverse Bay Bands of Odawa Indians, Michigan Department of Health and Human Services (MDHHS), Michigan Department of Agriculture and Rural Development (MDARD), Michigan United Conservation Club, Montcalm Township, National Deer Association, and 4H youth. There were also two unaffiliated stakeholders. The project began with an educational webinar on the charrette process, a series of five project start-up meetings where the steering committee designed the charrette, focus groups with a wide range of existing and new stakeholders, and finally the three-day charrette with the outcome of a stakeholder-informed, action-oriented CWD education and outreach plan. Overall project goals were:

- Build shared understanding and trust among individuals and organizations impacted by CWD.
- Develop and deliver an innovative, collaborative, participatory process to engage diverse stakeholders (e.g., hunters, nonhunters, meat processors, tribal and local governments, youth) in creating an educational and outreach plan.
- Engage wide audiences in the charrette process to generate and maintain support and motivate management actions/behaviors to reduce CWD prevalence and distribution in Michigan's core CWD area.
- Pilot this process in Michigan's core CWD area with deliverables that may be scaled for statewide distribution and a process that can be used elsewhere in affected areas.
- Share the implementation of the education and outreach plan among many organizations to increase the reach and efficacy of messaging.

Project Approach

The following approach was used in the core CWD area of Montcalm/Ionia Counties to achieve the goals outlined above:

1. Establishment of a **Project Steering Committee** that worked closely with the charrette team to provide context, review processes and materials, participate in the charrette and ensure engagement in the charrette from their constituents, and implement the outputs. Composition included representatives from key viewpoints including agencies, hunters, agriculture, local government, tribal government, and youth.
2. NCI hosted a **~2-hour webinar** to orient the steering committee and charrette team to the charrette process.
3. **Project Start-Up Meeting** – The steering committee engaged in five project start-up meetings, where the group completed a series of exercises to plan the project. Outputs included goals and objectives

of the project, measures of its success, product identification, who will be involved and how, a list of base data work, and a project roadmap and charrette schedule.

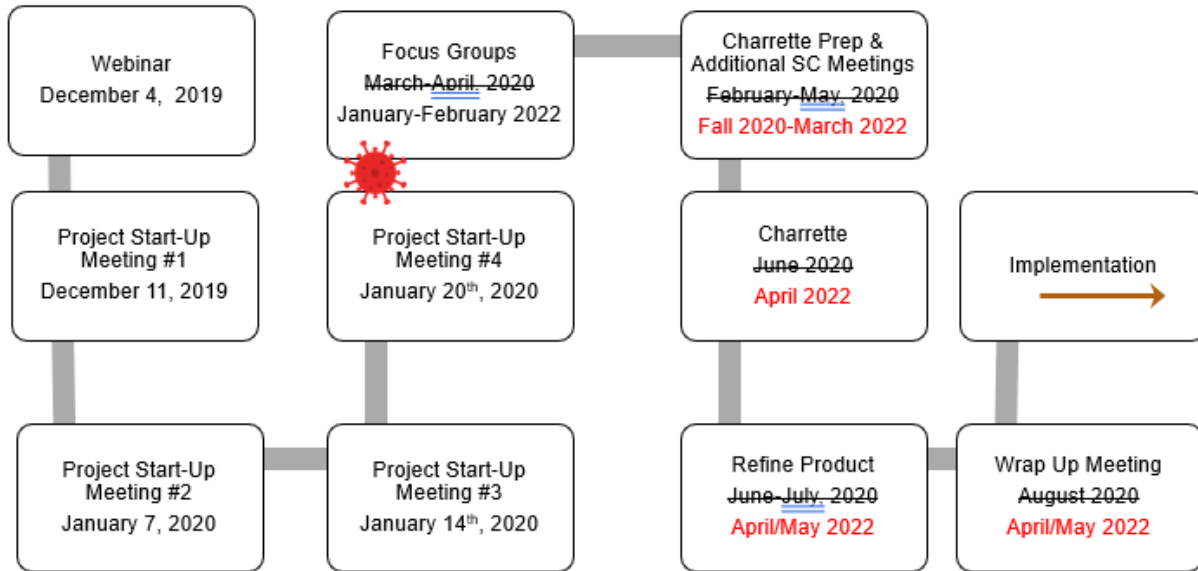
4. **Focus groups** of the key stakeholder groups identified in the Project Start-Up Meeting were conducted to learn about perceptions and knowledge of CWD-related issues that are relevant to the stakeholders and will provide key data inputs into the charrette. Turnout for the focus groups was low and, in some instances, **interviews** were used to understand additional viewpoints.
5. **Charrette** (3 days) – The charrette team engaged the steering committee, stakeholder groups, and the public in an immersive planning process to develop the CWD Education and Outreach Plan with concrete actions steps for responsible parties to begin work immediately and an evaluation component to assess impacts.

The Impact of Covid-19 on this Project

This project began in the fall of 2019 with the project start-up meetings with the steering committee that designed the entire charrette process. The charrette was to occur in June 2020. The charrette team responsible for carrying out the Steering Committee’s plan was scheduling focus groups when widespread restrictions on traveling and gathering were instituted in March 2020 (see Figure 1).

The location of the project area and lack of internet access did not lend itself well to conversion to a virtual process, so the project was placed on hold until it was safe to reconvene and conduct it in-person.

Figure 1. Project Timeline



In the two-year pause that followed, several things transpired:

- There was turnover on the steering committee.
- Several committee members’ organizational roles changed, and they could no longer serve.
- Some steering committee members contracted Covid-19, developing “long-hauler” disease and were too sick to continue in their roles.
- MDHSS steering committee members needed to direct their attention to the Covid-19 pandemic.

- MDARD steering committee members needed to direct their attention to an avian flu outbreak in 2022.
- The landscape of CWD changed, growing new hotspots in other areas of the state.
- The focus on Covid-19 and two years of normalizing CWD created an apathy for discussing CWD, and disease in general among the public.
- The MDNR significantly changed its testing program.

Significant time and energy from all were invested in building relationships and shared understanding among steering committee members. The delay eliminated much of the positive energy the group had achieved in building the process together. When the project was restarted, it had little momentum to move it forward.

When it was time to revisit the project, it was hard to move the process forward keeping in mind what conditions were like in 2019 such as the urgency around CWD; the fear, concern, unknown, and interest in CWD among stakeholder groups and to some degree among the public. Ultimately, the charrette team responsible for carrying out the process made some changes to the original process plan:

- Some focus groups were conducted virtually.
- The charrette schedule was shortened based on learnings from the focus groups.

Because of these factors, and likely many more, participation in the focus groups and charrette was low and not all of the stakeholder groups that the project team hoped to engage were represented fully.

Goals of the Education & Outreach Plan

The goal of this plan is to help individuals from across Michigan better understand the scope of the CWD effects and communicate the strategies that can be undertaken to reduce the spread of the disease and its impact.

Audiences

Chronic wasting disease in Michigan's deer population is having statewide impacts felt by many different stakeholders, well beyond traditional hunting groups. As more is learned about the disease, broader stakeholder groups may be impacted by regulations, legislative policy, and impacts on retail and environmental contamination. The health and wellbeing of the deer population in Michigan affects everyone in some way.

By engaging a diverse set of stakeholders including state, local, and tribal governments, hunters, farmers, youth, public health, and conservation clubs, we can develop a sound, all-encompassing outreach and education plan about CWD. The stakeholders involved reflect various viewpoints so as many people can be reached as possible.

While the intent of this process was to reach a diverse set of stakeholders, we acknowledge that segmenting the people affected by CWD to create effective messaging is an exercise prone to bias. Audience segmentation was used in this project to create manageable group sizes with similar messages.

Engagement with Audiences

During the project, there were three ways that the project team connected with stakeholders: steering committee meetings, focus groups and interviews, and charrette activities. Below, each method is described including who was invited and why, who attended, and other insights.

Steering Committee Meetings

A Project Steering Committee was formed to provide context, review processes and materials, participate in the charrette and ensure engagement in the charrette from their constituents, and implement the outputs. Composition included representatives from key viewpoints including agencies, hunters, agriculture, local government, tribal government, and youth. The steering committee participated in four start-up meetings to plan the charrette, various meetings for guidance through the Covid-pause and start-up when it was over, and in meetings during the charrette. At the end of the charrette, the steering committee met to review the plan and discuss implementation strategies.

Focus Groups and Interviews

To collect data prior to the charrette and understand knowledge gaps in advance, the charrette team held a series of focus groups in January and February 2022. Some of these were in-person and some were held virtually. In focus groups where no participants showed up, the charrette team arranged for individual interviews. Table 1 below shows the stakeholder groups and the number of participants from that group in focus groups or interviews.

Table 1. Stakeholder Groups and Number of Participants

	Focus Group/ Interview Number
Occupation (processors, taxidermists, vet/animal services, health care)	0
Land Managers (farmers, grain operators, Farm Bureau)	1
Business (chamber, bait/feed, sporting goods)	1
Privately-Owned Cervidae (POC) Operators	1
Local government (elected/city officials, law enforcement)	5 4 county 1 city 1 township
Outdoor enthusiasts (educators, enthusiasts, recycling, env. Ed orgs, rehabilitators, activists)	2
Non-affiliated hunters	3
Affiliated hunters	2
Tribes	4

	Focus Group/ Interview Number
Youth	2
State/Federal Agency Staff	7
Amish	0

It is noteworthy that during the local government interviews, the charrette team learned that prisoners have handled deer carcass removal from roadways in the past. This is an audience group that should have been heard from in a focus group and should be included in future education and outreach efforts.

Another noteworthy comment came from the state/federal agency staff focus group. There is a knowledge gap and research need regarding prions in landfill and wastewater systems and food supplies. This lack of knowledge is a barrier in cooperating with landfills and wastewater treatment facilities for deer carcass disposal.

Charrette

There were multiple touchpoints with audiences during the charrette. The first was an invitation-only dinner that kicked-off the charrette. Ideally, this would have included representatives from all of the stakeholder groups however the challenges previously noted to participation translated this dinner into a group of eleven hunters and farmers.

Despite ads on local radio channels, local newspaper articles, flyers in local businesses, personal invitations, eblasts through MDNR and MSU Extension networks, and steering committee member and partner organization outreach, the Open House again saw low participation, in general, and almost exclusively those that self-identified as hunters. The roughly 20 participants mostly arrived before noon and were over the age of 60. Those that showed up wanted to discuss regulations and hear from wildlife biologists, typically topics and speakers for traditional public meetings. While participants did engage with the activities that were available to them, they wanted to talk about the challenges to implementing the messages (e.g., rapid tests, lymph node testing and costs) and offer their solutions (e.g., alliances with other states). The charrette team concluded that for those that participated in the open house, which is a very small subset of the target audience, the plan should summarize what it means to have a CWD-positive deer and what to do should your deer test positive.

Twelve individuals attended the last engagement of the charrette, which included the presentation and launch of the plan. Some of these individuals had participated in other engagements of the charrette and some were new to the process. The launch did generate interest in implementation from a few organizations and individuals.

Plan Elements

The Education & Outreach Plan consists of four primary elements:

1. **Messages:** the information to help individuals understand CWD, its effects, management, etc. and what they can do to slow its spread and contribute to healthy deer populations.
2. **Messengers:** the sources for which intended audiences receive information or the messages. These can range from individuals to groups and organizations, government, businesses,

universities, and other institutions and organizations, with an emphasis on who are the trusted messengers.

3. **Delivery Channel:** how the intended audiences prefer to receive information. The project team focused on three primary channels: digital, print and in-person.
4. **Format:** the product that the intended audiences receive the information or messages. Several formats within each of the three channels (digital, print, in-person) exist. For example, websites, videos, text messages, radio, and emails are some digital channels. Letters, flyers, and articles are examples of print formats, while meetings, conferences and phone calls are in-person formats.

These four elements were chosen because they represent the key elements needed for an effective education and outreach plan. It is often the blending of these elements for a specific audience that is crucial. The information gathered for each element from each stakeholder group is presented in Table 2 below. Areas without information are blank for a variety of reasons: there weren't participants in focus groups or interviews, no questions were asked to address it, participants did not have information to share on that topic. Following the comprehensive table below, the elements and their evolution through the project are described in detail.

Throughout the rest of the report, if numbers precede or follow text, those numbers represent the number of participants that held that view or preference. Some stakeholders offered responses that they were unsure about, either of its relevance to others or this context. Those responses are listed with question marks in the table.

Table 2. Stakeholder Group Information Collected During Focus Groups/Interviews

	Known/ concerns	Messages	Trusted Sources (messengers)	Delivery Channel	Format (product)	Language (what to/ not use)
Occupation (processors, taxidermists, vet/animal services, health care)						
Land Managers (farmers, grain operators, Farm Bureau)	<ul style="list-style-type: none"> • Nature of disease • Knowledge sharing 		MDARD	<ul style="list-style-type: none"> • Video • Social media • Quick, no time 		
Business (chamber, bait/feed, sporting goods)						
Privately-Owned Cervidae (POC) Operators	<ul style="list-style-type: none"> • Nature of disease • Management • Regulation • Knowledge sharing 		<ul style="list-style-type: none"> • Veterinarian • MDARD • Reindeer POCs talk to people in Alaska 	<ul style="list-style-type: none"> • Mail • Direct contact with industry folks • Texts • Phone • Hunting Digest <p>No:</p> <ul style="list-style-type: none"> • email 	<ul style="list-style-type: none"> • Flyer 	<ul style="list-style-type: none"> • Spanish for migrant workers
Local government (elected/city officials, law enforcement)	<ul style="list-style-type: none"> • Nature of disease • Management • Regulation 	<ul style="list-style-type: none"> • Deer in urban environments • DPW/prisoners handling 	<ul style="list-style-type: none"> • DNR • USDA • MSU Fisheries & Wildlife 	<ul style="list-style-type: none"> • Email • County boards/administrator 	<ul style="list-style-type: none"> • Canned communication kits • Pamphlets 	Spanish

	Known/ concerns	Messages	Trusted Sources (messengers)	Delivery Channel	Format (product)	Language (what to/ not use)
	<ul style="list-style-type: none"> ● Economics/ sport 	<ul style="list-style-type: none"> ● Venison donations? 	<ul style="list-style-type: none"> ● Boone & Crocket lab ● MAC (ag, tourism) 			
Outdoor enthusiasts (educators, enthusiasts, recycling, env. Ed orgs, rehabilitators, activists)	<ul style="list-style-type: none"> ● Nature of disease ● Management ● Knowledge sharing 		<ul style="list-style-type: none"> ● Google ● Mayo clinic ● CDC ● NIH ● Peer reviewed articles ● Experts ● DNR ● QDMA ● Ducks Unlimited ● Pheasants Forever ● Woods & Waters Magazine ● Reach Hispanic employees through the church 	<ul style="list-style-type: none"> ● Social media ● Pamphlets ● Newspapers ● Library ● Websites ● Friends in wildlife fields 	<ul style="list-style-type: none"> ● App ● DNR digest Don't: <ul style="list-style-type: none"> ● Billboards ● Phone ● email 	
Non-affiliated hunters	<ul style="list-style-type: none"> ● Nature of disease ● Management 		<ul style="list-style-type: none"> ● MSU ● DNR ● Anything .edu 	<ul style="list-style-type: none"> ● Mail ● Email ● Podcasts 	<ul style="list-style-type: none"> ● Paper 	

	Known/ concerns	Messages	Trusted Sources (messengers)	Delivery Channel	Format (product)	Language (what to/ not use)
	<ul style="list-style-type: none"> ● Regulation ● Testing ● Knowledge sharing 		<ul style="list-style-type: none"> ● Scientists ● State orgs ● TN Dept of Wildlife ● Websites where CWD also exists e.g. NM or southwest CO ● Safari Club ● People in industry (TV personalities, hunting) ● Gabe from MUCC ● Conservation Officers ● Government ● Hunting biologist 	<ul style="list-style-type: none"> ● DNR facebook ● 5am Michigan Farm Report on Saturday/Sunday morning. 94.1A.M. ● Conversation ● DNR in schools? 		
Affiliated hunters	<ul style="list-style-type: none"> ● Management ● Knowledge sharing 		<ul style="list-style-type: none"> ● Peer reviewed articles ● National Deer Association ● Ted Nugent 	<ul style="list-style-type: none"> ● Science twitter ● Conferences ● Websites ● Podcasts ● Email? ● Facebook <p>Don't</p> <ul style="list-style-type: none"> ● Call ● text 		<p>Do:</p> <ul style="list-style-type: none"> ● use "Science communicator" to compress information into manageable and digestible information

	Known/ concerns	Messages	Trusted Sources (messengers)	Delivery Channel	Format (product)	Language (what to/ not use)
						<ul style="list-style-type: none"> ● “hunters have a role to play to help” <p>Don’t:</p> <ul style="list-style-type: none"> ● Use fear ● DNR up north
Tribes	<ul style="list-style-type: none"> ● Nature of disease ● Management ● Regulation ● Testing ● Knowledge sharing 		<ul style="list-style-type: none"> ● USDA ● CWD Alliance ● Peer ● Tribal Conservation Committee ● Peer reviewed articles 	<ul style="list-style-type: none"> ● Websites ● Conversation ● Facebook ● Community newsletters ● Email ● Science twitter ● Michigan Tribal Environmental Group 	<ul style="list-style-type: none"> ● Pamphlets ● Media toolkit 	<p>Don’t:</p> <ul style="list-style-type: none"> ● Lots of text ● Unaddressed letter ● Send letter and NOT copy DNR director <p>Do:</p> <ul style="list-style-type: none"> ● Use tribal language for deer and location
Youth	<ul style="list-style-type: none"> ● Nature of disease ● Management ● Knowledge sharing 		<ul style="list-style-type: none"> ● Google ● Well educated people ● DNR ● Hunters Digest 	<ul style="list-style-type: none"> ● News ● Instagram ● Mail ● Conversation ● Facebook ● Email ● Public meetings ● 4H, FFA events ● Wildlife banquets 	<ul style="list-style-type: none"> ● Flyers ● Sign interpretation 	<ul style="list-style-type: none"> ● Time messages before hunting season ● Remind more than once

	Known/ concerns	Messages	Trusted Sources (messengers)	Delivery Channel	Format (product)	Language (what to/ not use)
				Don't: <ul style="list-style-type: none"> • Call • Text 		
State/Federal Agency Staff	<ul style="list-style-type: none"> • Regulation • Management • Testing • Knowledge sharing 				<ul style="list-style-type: none"> • Video • posters 	
Amish						
OVERALL	Management - 8 Knowledge Sharing - 7 Nature of the Disease - 5 Regulation - 4 Testing - 3	<ul style="list-style-type: none"> • You matter. You can make a difference. • We need to work together. • Our common starting point is that we want a healthy deer population and environment. • Adaptive Management- Here's where to go to get 	DNR-4 Peer reviewed articles-4 MSU-2 USDA-2	Email - 5 Facebook - 3 Mail - 3 Websites - 3 In-person - 3 News - 2 Podcasts - 2 Science twitter - 2		

	Known/ concerns	Messages	Trusted Sources (messengers)	Delivery Channel	Format (product)	Language (what to/ not use)
		current information				

Messages

Message development was an iterative, three-step process. The first step began with understanding where gaps in knowledge or where concerns about CWD existed among participants through focus groups. The information about concerns and knowledge from focus group participants was grouped or coded into six categories: management of the disease, knowledge sharing/best practices, nature of the disease, regulations, testing, and overall. The charrette team then crafted messages to address the needs of each focus group by category. See Table 3 below. In many instances, the messages were the same across stakeholder groups. If a category or stakeholder group is grey, the charrette team decided that it didn't have enough information to propose messages, it wanted to work more directly with the stakeholder group (Tribes) to craft messages, or that some categories (regulations, testing, overall) applied to everyone.

Table 3. Messages Per Stakeholder Group

	Management of the Disease	Knowledge Sharing	Nature of the Disease	Regulations	Testing	Overall
Occupation (processors, taxidermists, vet/animal services, health care)	<ul style="list-style-type: none"> The MDNR has a plan to manage CWD throughout the state. 	<ul style="list-style-type: none"> It is recommended to wear gloves if you have to handle a deer carcass Report any deer that look sick or are acting abnormally to the DNR. 	<ul style="list-style-type: none"> CWD is not known to infect humans. Do not cut through brain, spinal cord, or lymph nodes when processing deer. Clean and disinfect all tools and equipment in a 50/50 bleach solution that 			

	Management of the Disease	Knowledge Sharing	Nature of the Disease	Regulations	Testing	Overall
			are used to process deer.			
Land Managers (farmers, grain operators, Farm Bureau)	<ul style="list-style-type: none"> • The MDNR has a plan to manage CWD throughout the state. 	<ul style="list-style-type: none"> • It is recommended to wear gloves if you have to handle a deer carcass • Report any deer that look sick or are acting abnormally to the DNR. 	<ul style="list-style-type: none"> • CWD is not known to infect humans. • Minimize commodity piles during harvest that may attract deer. • Explore deer mitigation methods to keep deer out of fields 			
Outdoor enthusiasts (educators, enthusiasts, recycling, env. Ed orgs, rehabilitators, activists)	<ul style="list-style-type: none"> • The MDNR has a plan to manage CWD throughout the state. • Many organizations are actively involved in research to study the disease. 	<ul style="list-style-type: none"> • Report any deer that look sick or are acting abnormally to the DNR. 	<ul style="list-style-type: none"> • Baiting and feeding deer can increase the risk of disease spread. • CWD is not known to infect humans. 			

	Management of the Disease	Knowledge Sharing	Nature of the Disease	Regulations	Testing	Overall
Hunters	<ul style="list-style-type: none"> • The MDNR has a plan to manage CWD throughout the state. • Many organizations are actively involved in research to study the disease. 	<ul style="list-style-type: none"> • Report any deer that look sick or are acting abnormally to the DNR. • CWD prions cannot be cooked out of meat. • The CDC recommends testing deer for CWD before eating meat from a deer harvested in a known CWD area. 	<ul style="list-style-type: none"> • Baiting and feeding deer can increase the risk of disease spread. • CWD is a prion disease. A prion is a misfolded protein produced by the body and cannot be “cured” with a vaccine or antibiotic. • CWD is not known to infect humans. 			
Youth	<ul style="list-style-type: none"> • The MDNR has a plan to manage CWD throughout the state. • Many organizations are actively involved in 	<ul style="list-style-type: none"> • Report any deer that look sick or are acting abnormally to the DNR. • The CDC recommends testing deer 	<ul style="list-style-type: none"> • CWD is not known to infect humans. • CWD is a prion disease. A prion is a misfolded protein 			

	Management of the Disease	Knowledge Sharing	Nature of the Disease	Regulations	Testing	Overall
	research to study the disease.	for CWD before eating meat from a deer harvested in a known CWD area.	produced by the body and cannot be “cured” with a vaccine or antibiotic.			
Business (chamber, bait/feed, sporting goods)						
POC						
Local government (elected/city officials, law enforcement)						
Tribes						
OVERALL				<ul style="list-style-type: none"> ● Regulations and testing change based on the information we have ● Here’s where to go to get the current information... 	<ul style="list-style-type: none"> ● You can make a difference by making one small change and together we can create a big change. ● We need to work together to slow the spread. 	

	Management of the Disease	Knowledge Sharing	Nature of the Disease	Regulations	Testing	Overall
						<ul style="list-style-type: none"> • We can work together to ensure Michigan has a healthy deer population and environment.

The charrette team then honed those messages to the following 18 messages that addressed knowledge gaps and uncertainty or concern about CWD among focus group participants.

1. *Deer congregating around bait and feed is a risk factor for CWD spread. [nature]
2. *CWD is not known to infect humans, and research is an ongoing priority. [nature]
3. Do not cut through brain, spinal cord, or lymph nodes when processing deer. [nature]
4. CWD is a prion disease that cannot be cured. A prion is a misfolded protein produced by the body. [nature]
5. Clean and disinfect all tools and equipment used to process deer in a 50/50 bleach solution. [nature]
6. Explore deer mitigation methods to keep deer out of fields [nature]
7. Minimize commodity piles during harvest that may attract deer. [nature]
8. CWD prions cannot be cooked out of meat. [knowledge sharing]
9. Report any deer that look sick or are acting abnormally to the DNR. [knowledge sharing]
10. *Public health experts recommend testing deer for CWD before eating venison from a known CWD area. [knowledge sharing]
11. Wear gloves if you handle a deer carcass. [knowledge sharing]
12. CWD testing is important to understand where disease is located in the state. [regs/testing]
13. *Want to know more? Get the current information here: Michigan.gov/CWD and MSU Extension's CWD website. [regs/testing]
14. Regulations and testing change based on the information and resources available. [regs/testing]
15. *One strategy to reduce **unknown** risk is to test your deer for CWD and not eat the meat if it's positive. [regs/testing]
16. *The State of Michigan funds the DNR, universities, and other organizations to study CWD and how to address it. [mngt]
17. As a regulatory agency, the MDNR has a plan to manage CWD throughout the state. [mngt]
18. We can work together to slow the spread of CWD and ensure Michigan has a healthy deer population and environment. [general]

Notes about messages:

- *The messages outlined in this document are scientifically accurate.*
- *They are intended for a reach to a broad audience.*
- *They are not all-encompassing messages about CWD.*
- *This is a community messaging plan. It is accepted and expected that organizations will build upon these messages to help inform their audiences.*
- *Because research and knowledge about CWD is updated continually, messages will change over time as new information is learned and discovered.*

The asterisked messages are those that charrette team members were especially curious about and wanted more input from stakeholders. While the other 12 messages didn't enter charrette discussions specifically, they are still valid messages that can and should be used in education and outreach efforts. Each organization implementing this plan will need to decide which messages are most relevant for their intended audience.

In the second step of message development, the six tested messages of interest were refined through a world cafe activity held on April 22, 2022, at the Sidney Township Hall. The world cafe activity had 10 members of the public comment on each message which was written on large sheets of paper at tables (one message per table). World cafe participants rotated through the tables, making notes on the paper

about the messages, building upon one another’s comments as they rotated through six tables (Brown, Homer, & Isaacs, 2007). They also generated discussion about what they thought about the messages. This discussion included important ideas about each message’s context, barriers related to each message, and strategies that might be helpful in overcoming those barriers. Table 4 below notes both the refined messages and summarizes the discussion about each message. They evolved through the charrette and the context of the conversations that evolved them are important and preserved for reference. Often those conversations centered on barriers or challenges to implementing the message and so recommended strategies to overcome those barriers are also included.

Table 4. Tested Messages and Summary of Discussion

Tested Messages about the Nature of the Disease	
Message	Deer congregating around bait and feed is a risk factor for CWD.
Context	<p>CWD is transmissible in deer, and infected deer can transmit the disease to another deer through direct contact. As a result, infected are capable of spreading the disease to other deer around bait and feed as multiple studies have shown deer do come in direct contact with other deer at these sites. Even in the absence of direct contact, the disease can be spread at baiting and feeding sites as the prion that causes the disease will remain infectious on plants and soil for months or years after being deposited through saliva, urine, and feces. has been shown to survive on surfaces.</p> <p>What research has not been able to show, however, is whether the prevalence of the disease, proportion of the population, is affected by feeding and baiting. Does feeding and baiting actually lead to higher prevalence of CWD in deer? This appears to be a reasonable assumption, but research documenting this outcome or the degree to which prevalence changes.</p> <ol style="list-style-type: none"> 1. Unknown relationship between baiting, feeding and prevalence; this unknown doesn’t allow the message to be concrete and use words like “can” or “will”. 2. Banning baiting and feeding is one way that specific human behavior can reduce risk of disease transmission.
Challenges to Implement the Message	<p>The ability of the team to strengthen the language by using “will” or “can” due to the unknown relationship between baiting and feeding to CWD is a major challenge. We can extrapolate from other disease related studies that baiting and feeding sites where animals congregate can and does spread CWD. Since studies directly documenting an increase in prevalence, however, are lacking, we can only assume that baiting and feeding leads to an increased prevalence of CWD and therefore the ability to use strong language may not be accurate.</p> <p>In a review of 29 studies investigating the relationship between supplemental feeding and diseases transmitted through close or direct contact of animals, 95% of studies reported that supplemental feeding increased the risk of disease transmission. In addition, the longer food is on the landscape, the greater the likelihood in increased disease transmissions. Murray, M. H., Becker, D. J., Hall, R. J., & Hernandez, S. M. (2016). Wildlife health and supplemental feeding: A review and management recommendations. <i>Biological Conservation</i>, 204, 163–174.</p> <p>People want to know if there is scientific data linking baiting and feeding to an increase in CWD prevalence. What our ongoing study is attempting to do is to</p>

	<p>determine if how often and how long risky deer behaviors for transmission are occurring is increasing as a result of a variety of conditions, including around bait and feed compared to food plots. If so, we would reasonably expect that the conditions with higher frequency and duration of risky behaviors will result in higher prevalence rates.</p> <p>Higher prevalence rates are bad enough for a local population, but it also contributes to the increased likelihood of spreading the disease to neighboring populations. Consequently, reducing feeding and baiting is a way that people can contribute to slowing the spread of CWD.</p>
Strategies to Overcome Challenges	<ol style="list-style-type: none"> 1. Advocate for further research to answer the question if congregation of animals around feeding/baiting sites does increase disease prevalence. 2. Educate people about the harm that feeding deer can have on the animal (eating corn can affect the deer’s digestive system causing lactic acid formation in the rumen, which in severe cases can lead to dehydration and death). https://extension.unh.edu/resource/more-harm-good-why-you-shouldnt-feed-deer

Message	CWD is not known to infect humans, and research is an ongoing priority.
Context	<ol style="list-style-type: none"> A. Who is doing the research? B. Is there sufficient funding for this research? C. What results have already been found and how are those results disseminated? D. Other prion diseases are known to infect humans - is it safe to make the statement that CWD is not known to infect humans? E. It is unclear how we are sure that CWD does not infect humans, unclear if there is a human health test. F. There was a macaque study conducted years ago that showed macaques could contract CWD, which people remember. Unfortunately, messaging around this study and the implications has been minimal.
Challenges to Implement the Message	<p>Uncertainty around if CWD will eventually infect humans makes this message potentially divisive.</p> <p>Research is ongoing and will need to be updated regularly.</p>
Strategies to Overcome Challenges	Get your deer tested and don’t eat it if it's positive.

Tested Messages about Knowledge Sharing/Best Practices	
Message	Public health experts recommend testing deer for CWD before eating venison from a known CWD area.
Context	A. Participants wanted to make clear who is recommending the testing be done; however, the CDC was not considered a trusted source. ‘Public health experts’

	<p>seemed a good general option for a source. The actual risk to humans eating a positive CWD deer is not known.</p> <p>B. Participants were most concerned about how challenging (inconvenient, expensive) getting venison tested can be.</p> <p>C. Some participants discussed further defining the known CWD ‘area’ aspect. One suggestion was to change it to county.</p> <p>D. Other suggestions for places to include this message more broadly included having it as a question when someone buys a deer hunting license (‘Are you aware of CWD...?’), having a statement about CWD in the license receipt email, putting it on a deer tag, including it in hunter safety programs, and having information at processors. The suggestion for the deer tag and license receipt seemed to be more specifically listing which counties have had positive CWD cases rather than specifically about testing.</p>
Challenges to Implement the Message	<p>The challenge of getting testing done was the primary concern. It is now more difficult to get a convenient and free test done in Michigan. There is a small time frame and a reduced geographic area for free tests. Otherwise the test incurs a fee, requires shipping or drop off, and few labs do the testing. If they get a positive test result, it also feels like a waste of venison, time, and money, especially if they had submitted it for processing.</p> <p>Another challenge was whether or not to include additional context about testing, in that there is no known infection to humans. For some people it seemed to help transparency to include this statement, others felt it was contradictory to indicate testing is recommended even though there are no known human infections.</p>
Strategies to Overcome Challenges	<ol style="list-style-type: none"> 1. One suggestion was to have meat processors handle the submission of lymph nodes for testing, possibly with an additional fee. 2. Providing clinics or workshops to help individuals collect and submit their lymph nodes for testing and/or subsidizing the cost of tests in some way. 3. Developing and distributing easy, ‘rapid’ CWD tests (do not currently exist).

Tested Messages about Regulations & Testing	
Message	Want to know more? Get the current information here: Michigan.gov/CWD and MSU Extension’s CWD website.
Context	<p>The content of this message may be less important than the sources, channels, and formats used to distribute the message.</p> <p>The message alone may be non-impactful and could be improved by pairing with a message indicating what content can be found at the links, depending on the target audience (e.g., will find testing information, videos on lymph node removal, etc.). People need to understand why they should care to click the link. For instance, connecting to broader audiences, amplifying the financial impacts of CWD to connect with politicians and municipal leaders, using impacts on wildlife wellbeing to find common ground with non-hunting organizations, etc.</p>
Challenges to Implement the Message	Different demographic groups and individuals have varying preferences for how they would like to receive information. Some will not visit the websites linked in this message unless it is posted on social media. Others will not visit the websites at all, and only wish to receive information in hardcopy print channels, such as magazines

	<p>(e.g., Woods ‘n Water, Michigan Outdoor News, Michigan Outdoor Magazine, National Deer Association).</p> <p>If audiences do not understand the relevance of CWD or have other motivating reasons for inquiring for more information, this message may fall flat.</p>
Strategies to Overcome Challenges	<p>Take care to match your channel and format with your target audience. Deliver the message through a diversity of channels and formats to reach as many audiences as possible.</p> <p>It may be important to pair this message with additional messages that address reasons why an individual should be interested in visiting the websites or learning more about CWD.</p>

Message	<p>One strategy to reduce unknown risk is to test your deer for CWD and not eat the meat if it's positive.</p> <p>Some additional message recommendations:</p> <ul style="list-style-type: none"> ● Test your deer to reduce risk for CWD and do not eat the meat if it is positive, but rather properly dispose of the infected animal. ● Venison from harvested deer should be tested for CWD before it is eaten. If positive, venison from these animals should not be consumed and the animal/venison should be disposed of following best management practices.
Context	<p>Numerous agencies and health experts have warned against eating venison from deer known to be infected with CWD. Although there is still no evidence that humans can contract this disease from deer, this recommendation remains to avoid unnecessary risks as the consequences of prion diseases are so severe. This recommendation, however, is difficult to implement for a variety of reasons. We currently do not have an approved food safety test, we do not have a rapid test that could alleviate problems of trying to store entire deer carcasses before the status is known, the test can be expensive and requires technical skills for tissue sampling, there is a lack of testing locations, etc.</p>
Challenges to Implement the Message	<p>Comments</p> <ul style="list-style-type: none"> ● After the word “positive” I would add something link “...but rather properly dispose of the infected animal ● Concerns <ul style="list-style-type: none"> ○ Testing cost ○ Logistics of testing ○ Delay of results ○ The word “unknown” ○ Is unclear and vague ○ Question the management need <ul style="list-style-type: none"> ▪ Unknown (clarification” ● Where is the worry of farmed deer? ● 110% agree, but I have a big concern with the lack of DNR testing (3 days). I won’t eat a deer that is not tested, I won’t shoot a deer I can’t eat ● CDC does not recommend eating untested venison from CWD areas

	<ul style="list-style-type: none"> ● The DNR doesn't seem worried about it so I don't worry about it <ul style="list-style-type: none"> ○ Another commenter did not agree with this statement ● Are we looking at the best practices of other states, i.e., Wisconsin, Colorado, Wyoming, etc. <ul style="list-style-type: none"> ○ Another commenter agreed with this comment ● Need to communicate how to get deer tested ● The challenge of getting tested needs eased <ul style="list-style-type: none"> ○ Another commenter agreed and added: <ul style="list-style-type: none"> ▪ More testing ▪ Quicker test results ▪ More locations ▪ Develop cheaper test ● Need home rapid test ● How do you ensure the processor does not have cross-contamination?
<p>Strategies to Overcome Challenges</p>	<p>Although no cases have been found where people have contracted CWD from deer, you should still not eat venison from any deer testing positive for CWD. Instead, any deer that tests positive needs to be properly disposed of using best management practices. Currently, the existing test for CWD in deer can only be done on dead animals and requires tissue samples from specific lymph nodes. This poses problems for hunters as this test additionally takes at least 3 days for results. Ideally, a deer should not be processed into venison until the test results are known as the equipment to process a deer can be cleaned but cannot be guaranteed to be free of all infectious prions as we currently do not have a cleaning solution that renders the prions safe.</p> <p>If processed before the results are known, the venison can be kept frozen while awaiting results. Processors should clean all equipment and surfaces between deer of unknown testing status following best management practices, however, there can still be residual infectious material. As most processors do not have the ability to store whole carcasses in refrigeration pending test outcomes, developing a rapid test is a priority. This would allow faster segregation of deer and reduce risk of cross contamination. Rapid tests should be available to hunters as they may avoid the cost/time of deer processing if they do not need to wait for traditional test results.</p> <p>Ideally, all deer should be tested before consumption, but at a minimum from areas where CWD has been confirmed in deer (see MDNR positive deer location maps). Additionally, all farmed/captive deer should be tested before consumption as the source and travel history of those animals may not be completely known.</p> <p>Disposal of positive animals/venison should be done following best management practice to avoid potential environmental contamination. Need to review practices of other states here along with health/other official recommendations to provide those best management practices.</p>

Tested Messages about Management of the Disease	
Message	The State of Michigan funds the DNR, universities, and other organizations to study CWD and how to address it.
Context	<p>A. No detail about type of research</p> <p>B. Who are the orgs? At the state level, rather than federal (MSU, MDNR, etc.)</p> <p>C. Multi-tiered messages: who is researching, where, when, what are the results</p> <p>D. Environmental cleanup</p>
Challenges to Implement the Message	<p>When reviewing this message, participants really wanted more detail about the research being conducted. The who, what, when, where and why - and also what researchers are finding through their research.</p> <p>This information has been released to the public through:</p> <ol style="list-style-type: none"> 1. Press releases and email blasts from the Michigan DNR. 2. Videos created by MSU Extension/DNR detailing CWD research projects funded by the State of Michigan. 3. Articles in Michigan Outdoor News authored by Russ Mason - MSU research coordinator. <p>Though this information has been widely distributed, folks still aren't getting the message - or at least, the participants at this Charrette hadn't seen the information. To resolve this, additional efforts should be made to let folks know about the research that is currently happening in our state and through funding from our state.</p>
Strategies to Overcome Challenges	<ol style="list-style-type: none"> 1. Further promote the research videos that MSU Extension/DNR created in 2021 detailing research projects funded by the State of Michigan. 2. Use more diverse formats/tools - social media, email blasts, press releases, and various other tools - to discuss findings of CWD research to this point and to reach more audiences.

Following the world cafe activity, the six messages of interest were revised based on suggestions and ideas from the public. These revised messages were the basis of the third step of message development, when they were presented to members of the public during an open house. Twenty members of the public attended an open house and participated in a card-sort activity where they ranked the importance of the six messages (Lien, Ruyle, & Lopez-Hoffman, 2018). First, they sorted the messages into three categories: less important, neutral/no opinion, or more important. Then they sorted the messages into a more refined ranking, 1 (less important to me) through 5 (more important to me). During this sorting and ranking process, the conversation about the messages was recorded. Table 5 below summarizes the message ranking. Some comments that came up while participants completed the activity included not knowing enough information to evaluate the human infection message, wanting more information about how CWD initially started spreading and what other animals that can get it, recognizing the challenge with conveying the public health and testing message with a suggestion to combine some messages, wanting the funding to specifically include more testing and another who didn't think Michigan general funds were available for CWD, and two people referencing baiting, one against it and the other ambivalent but did not think it makes a difference relative to CWD.

Table 5. Card sort activity ranking (1 = less important, 5 = more important) from each individual participant (N = 15) and summary statistics. Avg. = average per message of all individual ranking; Order = highest to

lowest message by average; % Imp. = percent of participants who ranked the message as 4 or 5. Only the first part of the tested message is shown for each. See earlier sections of the report for the full message wording.

	Messages					
	Public health experts recommend...	Deer congregating around bait ...	One strategy to reduce unknown risk ...	CWD is not known to infect humans...	The State of Michigan funds ...	Want to know more? ...
N	15	15	15	15	15	15
Mode	5	5	5	5	5	3
Avg.	3.80	3.73	3.73	3.87	3.67	3.33
Order	#2	#3	#3	#1	#4	#5
% Imp.	66.67%	66.67%	66.67%	66.67%	66.67%	46.67%

At the Charrette Open House, held on April 23, 2022, at the Montcalm County Fairgrounds, members of the public also had a chance to provide their preferences on messengers, (trusted sources), delivery channel and format, and timing/frequency of education and outreach. At the open house, 20 people attended, with 18 self-identifying as hunters and two self-identifying as interested parties. One youth participated with his family but chose to identify as a hunter instead of as a youth.

Messengers (Trusted Sources)

Understanding where audiences receive information that they trust and use is key to effective messaging. Table 6 below outlines the trusted sources by stakeholder group that were discovered in focus groups. If the Trusted Source column for a stakeholder group is empty, there was either no representation among that group in a focus group or interview or that group was not asked about trusted sources (state/federal agency staff).

Table 6. Trusted Sources per Stakeholder Group

	Trusted Sources (messengers)
Occupation (processors, taxidermists, vet/animal services, health care)	
Land Managers (farmers, grain operators, Farm Bureau)	MDARD
Business (chamber, bait/feed, sporting goods)	

	Trusted Sources (messengers)
Privately-Owned Cervidae (POC) Operators	<ul style="list-style-type: none"> ● Veterinarian ● MDARD ● Reindeer POCs talk to people in Alaska
Local government (elected/city officials, law enforcement)	<ul style="list-style-type: none"> ● DNR ● USDA ● MSU Fisheries & Wildlife ● Boone & Crocket lab ● MAC (ag, tourism)
Outdoor enthusiasts (educators, enthusiasts, recycling, env. Ed orgs, rehabilitators, activists)	<ul style="list-style-type: none"> ● Google ● Mayo clinic ● CDC ● NIH ● Peer reviewed articles ● Experts ● DNR ● QDMA ● Ducks Unlimited ● Pheasants Forever ● Woods & Waters Magazine ● Reach Hispanic employees through churches
Non-affiliated hunters	<ul style="list-style-type: none"> ● MSU ● DNR ● Anything .edu ● Scientists ● State orgs ● TN Dept of Wildlife ● Websites where CWD also exists e.g. NM or southwest CO ● Safari Club ● People in industry (TV personalities, hunting) ● Gabe from MUCC ● Conservation Officers ● Government ● Hunting biologist
Affiliated hunters	<ul style="list-style-type: none"> ● Peer reviewed articles ● National Deer Association ● Ted Nugent
Tribes	<ul style="list-style-type: none"> ● USDA ● CWD Alliance ● Peer ● Tribal Conservation Committee

	Trusted Sources (messengers)
	<ul style="list-style-type: none"> ● Peer reviewed articles
Youth	<ul style="list-style-type: none"> ● Google ● Well educated people ● DNR ● Hunters Digest
State/Federal Agency Staff	
Amish	

During the charrette, participants were asked to identify the top trusted sources that were discovered during the focus groups. Below are the top trusted sources:

10-Hunter Focused Organizations (e.g., CWD Alliance, Ducks Unlimited, MUCC, National Deer Association, Pheasants Forever, QDMA, Safari Club)

8-State Government Sources (e.g., Conservation Officers, MDNR, MDARD, Other state governments (e.g., CO, NM, TN))

7-Printed Sources (e.g., peer reviewed articles, Outdoor Life, Midwest Life, Woods & Waters Magazine, Field and Stream)

6-University Sources (e.g., Michigan State University, MSU Fisheries & Wildlife, Boone & Crockett lab)

4-National Government Sources (e.g., Center for Disease Control (CDC), U.S. Department of Agriculture (USDA), U.S. Geological Survey (USGS))

2-Individual People Sources (e.g., neighbors, peers, people in industry (TV personalities, hunting), Scientists, veterinarian)

2-Local Government Sources (e.g., my township, city county)

1-Churches and Faith-Based Organizations

1-Farming & Land Management Sources (e.g., Farm Bureau, Conservation District)

Because there can be lots of variety among those broad categories of sources, participants were also asked which individual source they trusted for information. The following were the results:

National Government Sources

- 2-Center for Disease Control (CDC)
- 1-U.S. Department of Agriculture (USDA)
- 1-U.S. Geological Survey (USGS)

Health Sources

- 1-Mayo clinic

Farming & Land Management Sources

- 2-Conservation District

Hunter Focused Organizations

- 7-National Deer Association
- 5-Michigan United Conversation Clubs (MUCC)

- 5-Quality Deer Management Association (QDMA)
- 3-CWD Alliance

Individual People Sources

- 3-Neighbors
- 2-Peers
- 3-People in industry (TV personalities, hunting)
- 2-Scientists
- 1-Veterinarian

Printed Sources

- 5-Peer reviewed articles
- 3-Woods & Waters Magazine
- 1-Field and Stream
- 1-Midwest Living
- 1-Outdoor Living

University Sources

- 10-Michigan State University
- 6-MSU Fisheries & Wildlife
- 1-Boone & Crocket lab

State Government Sources

- 16-Michigan Department of Natural Resources (MDNR)
- 9-Conservation Officers
- 3-Other state governments (e.g., Colorado, New Mexico, Tennessee)
- 1-Michigan Department of Agriculture and Rural Development (MDARD)

Ranked among each other, the following are trusted sources for CWD information:

- 16 Michigan Department of Natural Resources (MDNR)
- 10 Michigan State University
- 9 Conservation Officers
- 7 National Deer Association
- 6 MSU Fisheries & Wildlife
- 5 Michigan United Conversation Clubs (MUCC)
- 5 Quality Deer Management Association (QDMA)
- 5 Peer reviewed articles
- 3 CWD Alliance
- 3 Neighbors
- 3 People in industry (TV personalities, hunting)
- 3 Woods & Waters Magazine
- 3 Other state governments (e.g., Colorado, New Mexico, Tennessee)
- 2 Center for Disease Control (CDC)
- 2 Conservation District
- 2 Peers
- 2 Scientists
- 1 U.S. Department of Agriculture (USDA)
- 1 U.S. Geological Survey (USGS)

- 1 Mayo clinic
- 1 Veterinarian
- 1 Field and Stream
- 1 Midwest Living
- 1 Outdoor Living
- 1 Boone & Crocket lab
- 1 Michigan Department of Agriculture and Rural Development (MDARD)

Participants were also invited to share additional trusted sources where they get information about CWD or to tell us anything else they wanted us to know about trusted sources. Additional sources mentioned were:

- 6 - The National Rifle Association’s National Rifleman Publication -
- 2 - National Wild Turkey Federation
- 4 - Michigan Outdoor News
- 4 - PBS and Michigan Out-Of-Doors TV show
- 3 - The Michigan State University Veterinary Diagnostic Laboratory
- 2 - MSU Extension Educators, Katie O. and Erica R.

Additionally, 2 individuals mentioned that they get more information about CWD than they used to from the local news. Three people mentioned that they don’t trust the DNR and one person said they’re not sure they trust anyone to give them unbiased information about CWD.

The primary recommendations based on this information is to work alongside trusted sources to deliver messages to intended audiences and this may be best accomplished by forming a group, coalition, or network to implement coordinated messaging and activities.

Delivery Channel and Format

Table 7 below outlines the preferred delivery channels and formats by stakeholder group that were discovered in focus groups. If a column for a stakeholder group is empty, there was either no representation among that group in a focus group or interview or that group was not asked about channels and formats (state/federal agency staff). Some stakeholders offered responses that they were unsure about, either of its relevance to others or this context. Those responses are listed with question marks in the table.

Table 7. Delivery Channel and Format per Stakeholder Group

	Delivery Channel	Format (product)
Occupation (processors, taxidermists, vet/animal services, health care)		
Land Managers (farmers, grain operators, Farm Bureau)	<ul style="list-style-type: none"> ● Video ● Social media ● Quick, no time 	

	Delivery Channel	Format (product)
Business (chamber, bait/feed, sporting goods)		
Privately-Owned Cervidae (POC) Operators	<ul style="list-style-type: none"> ● Mail ● Direct contact with industry folks ● Texts ● Phone ● Hunting Digest <p>No:</p> <ul style="list-style-type: none"> ● email 	<ul style="list-style-type: none"> ● Flyer
Local government (elected/city officials, law enforcement)	<ul style="list-style-type: none"> ● Email ● County boards/ administrator 	<ul style="list-style-type: none"> ● Canned communication kits ● Pamphlets
Outdoor enthusiasts (educators, enthusiasts, recycling, env. Ed orgs, rehabilitators, activists)	<ul style="list-style-type: none"> ● Social media ● Pamphlets ● Newspapers ● Library ● Websites ● Friends in wildlife fields 	<ul style="list-style-type: none"> ● App ● DNR digest <p>Don't:</p> <ul style="list-style-type: none"> ● Billboards ● Phone ● email
Non-affiliated hunters	<ul style="list-style-type: none"> ● Mail ● Email ● Podcasts ● DNR facebook ● 5am Michigan Farm Report on Saturday/Sunday morning. 94.1A.M. ● Conversation ● DNR in schools? 	<ul style="list-style-type: none"> ● Paper
Affiliated hunters	<ul style="list-style-type: none"> ● Science twitter ● Conferences ● Websites ● Podcasts ● Email? ● Facebook <p>Don't</p> <ul style="list-style-type: none"> ● Call ● text 	
Tribes	<ul style="list-style-type: none"> ● Websites 	<ul style="list-style-type: none"> ● Pamphlets

	Delivery Channel	Format (product)
	<ul style="list-style-type: none"> ● Conversation ● Facebook ● Community newsletters ● Email ● Science twitter ● Michigan Tribal Environmental Group 	<ul style="list-style-type: none"> ● Media toolkit
Youth	<ul style="list-style-type: none"> ● News ● Instagram ● Mail ● Conversation ● Facebook ● Email ● Public meetings ● 4H, FFA events ● Wildlife banquets Don't: <ul style="list-style-type: none"> ● Call ● Text 	<ul style="list-style-type: none"> ● Flyers ● Sign interpretation
State/Federal Agency Staff		<ul style="list-style-type: none"> ● Video ● posters
Amish		

During the charrette, participants were asked to identify their preferred delivery channel. Below were the responses:

- 9-Digital (Radio, TV, web sites, social media)
- 5-Print (newspapers, newsletters, flyers, billboards)
- 3-In-Person (talks at meetings, special meetings)

When asked if they liked specific formats within those three delivery channels, the following preferences were shown (Figures 2-4). The scale along the bottom represents the number of participants holding the preference of "I don't like it" (grey), "I'm neutral" (orange), or "I like it" (blue).

Figure 2. Digital Format Preferences

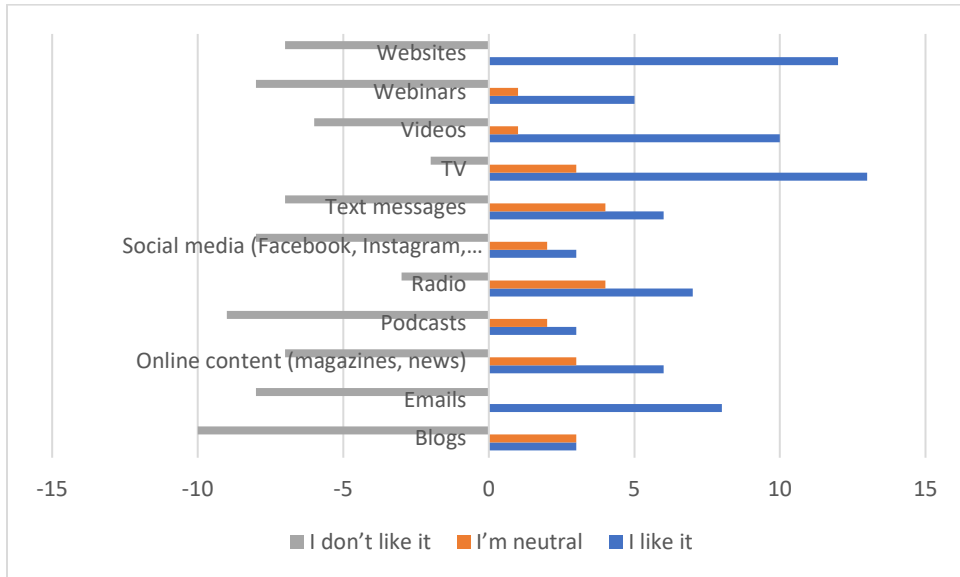


Figure 3. Print Format Preferences

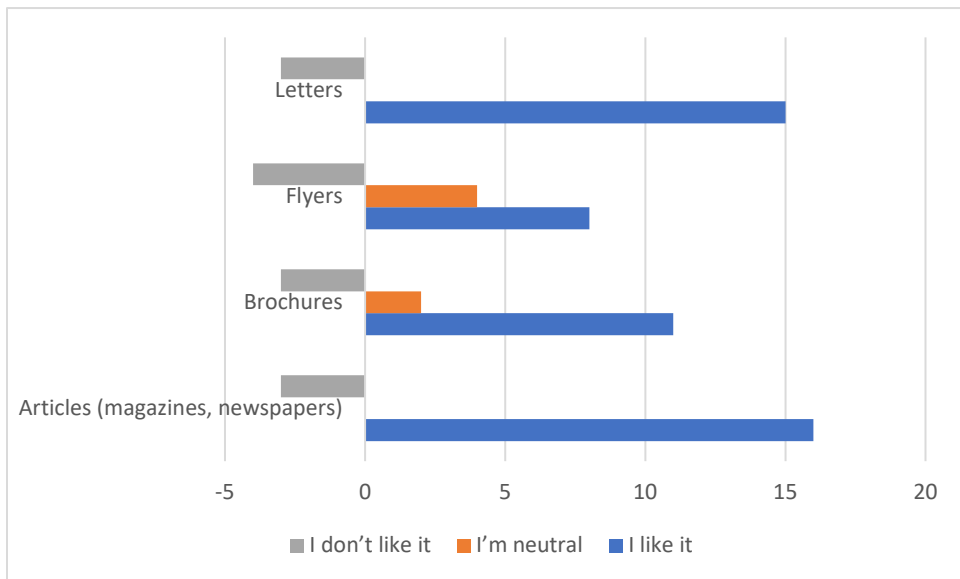
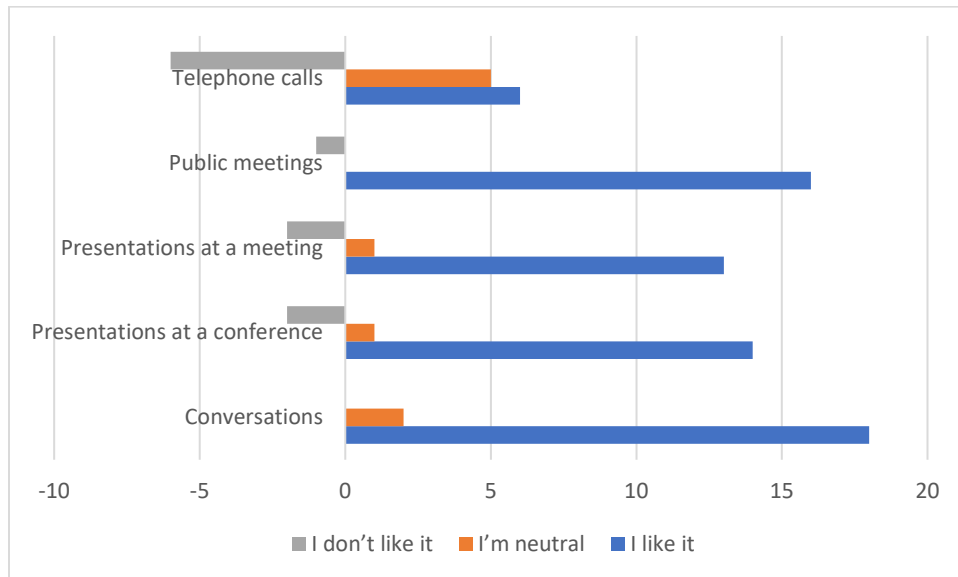


Figure 4. In-Person Format Preferences



The primary recommendations based on this information is to cross-channel messages (e.g., turn a blogpost into a newsletter article, add a website to printed article), cross-channel formats (e.g., use tags to cross digital formats, create varieties of printed materials) and generally use multiple variations of each to reach people. Collaborating with trusted sources in preferred channels and formats becomes especially important in light of the number of channels and formats that are needed for effective messaging.

Timing and Frequency of Education and Outreach

In terms of how often participants want to receive communication, they expressed a preference for the following frequencies:

Monthly-10
Hunting-5
Quarterly-2

and during the following seasons:

Summer-9, with 6 of those being August/September right before hunting season
Fall-5
Spring-2

More Suggestions

Throughout the charrette process, members of the charrette planning team listened carefully and took note of ideas and suggestions members of the public had about effective ways to get the word out about CWD. This section summarizes those ideas.

1. Put QR codes on deer tags that direct hunters to more information.
2. Train processors in lymph node extraction. Create a system where DNR representatives could make weekly pick-ups at their places of business. (Customers could pay for the cost of testing if government funding is not available). It would be beneficial if they were encouraged to question

all hunters on whether or not they planned on testing their deer and even had educational literature to provide them. This could be a business card with CWD resources.

3. Hunting Digest can be used even further to educate and encourage.
4. When one purchases a hunting license, and they used their email, they receive an email receipt for their purchase from the DNR. I think an email should be sent, along with this receipt, with CWD information, resources, etc. The email title should be something simple yet able to grab the reader's attention. Once they click on it, it should be very user friendly and prompt the user to questions and resources pertaining to all aspects of CWD.
5. When a deer hunting license is purchased at vendors, they could provide a business card with the license with CWD testing information, website links, etc.
6. Discuss CWD, if not already, at Hunter Safety courses. Youth should be aware and educated as they are the future of conservation.
7. Ensure that deer donated through programs such as Michigan Sportsmen Against Hunger are tested and are negative.
8. When one visits the DNR website and clicks on Deer Hunting, can a "pop-up" be created with a reminder about the importance of having deer tested and other important messages.
9. For the probably large percentage of hunters who will not have their deer tested due to an array of factors, it is very important to reinforce the importance of herd management and habitat management. Organizations might not be able to "sell" these hunters on CWD and testing, but they still are valuable to efforts to contain prevalence rates. If these hunters do buy into using proper management strategies in order to increase doe harvest and work for a healthier herd, they will help without CWD even if they have "CWD fatigue," think CWD is fake, etc. This group of hunters can help. Continuing to challenge hunters to harvest more doe and engage in best management practices is as important as testing and CWD education/research.
10. When one purchases a deer hunting license at a vendor, they provide their ID and there are basic questions asked. Explore the value in having one of the questions act as a data collection as a survey question. For example, "If successful, do you plan on having your deer tested for CWD?"
11. On the actual harvest tag a CWD testing message could be bolded under where the hunter punches the day, date, etc.

Implementation Acknowledgements

Turnover within organizations interested in executing the plan as of May 2022, and longevity and sustainability of positions of those involved who would carry out the plan will limit capacity to implement this plan and change what is possible for implementation.

Evaluation of the Charrette

Three of the charrette activities included evaluations at the session's end to gather information from the participants about their experience participating in charrette activities. World cafe, Open House, and Launch of the Plan meetings included paper surveys with Likert-type 5-point scale questions and open-ended questions. The steering committee evaluation also included a place to provide contact information if a participant was interested in contributing to the implementation of the Education and Outreach Plan. Summaries of the evaluation data follow.

World Café

Eleven individuals participated in the World Café; we received completed evaluations from 11 participants.

Generally, participants expressed satisfaction with the activity, with all questions receiving an average score above a 4.0 (items coded on a 5-point agreement scale, with 5=strongly disagree and 1=strongly agree) (Table 8). Highest scores reported for “I felt welcome to share my ideas during this activity” and “I felt listened to”, with average scores of 4.8. Lowest scores were reported for “I heard perspectives different from my own” and “the messages at the tables were meaningful”, both with an average score of 4.4.

Table 8. World Café Evaluation

Please indicate how much you agree or disagree with the following statements ¹	Average score
The purpose of the activity was clear to me	4.5
I felt welcome to share my ideas during this activity	4.8
I felt listened to	4.8
I felt my opinion mattered	4.7
The messages at the tables were meaningful	4.4
I heard perspectives different from my own	4.4
This activity was interesting	4.5
Overall, this event was a good use of my time	4.6

¹strongly disagree=1; disagree=2; neutral=3; agree=4; strongly agree =5

Open House

Twenty individuals participated in the Open House; we received completed evaluations from 17 participants.

As with the World Cafe, participants generally expressed satisfaction with the activity, with average scores ranging from 3.4 to 4.3, or neutral to agree (items coded on a 5-point agreement scale, with 5=strongly disagree and 1=strongly disagree) (Table 9). Highest scores reported for “I felt listened to” (average=4.3) and “I felt welcome to share my ideas during this activity” (average=4.2). Lowest scores were reported for “I heard perspectives different from my own” (average=3.4) and “this activity was interesting” (average=3.8). Given the preponderance of hunting interests reflected in this event, and across the charrette, it is unsurprising that respondents feel they did not hear perspectives different than their own. Overall, participants agreed that this event was a good use of their time, with an average of 4.1.

Table 9. Open House Evaluation

Please indicate how much you agree or disagree with the following statements ¹	Average score
The purpose of the activity was clear to me	3.9
I felt welcome to share my ideas during this activity	4.2
I felt listened to	4.3
I felt my opinion mattered	4.1
The messages in the activity were meaningful	3.9
I heard perspectives different from my own	3.4
This activity was interesting	3.8
Overall, this event was a good use of my time	4.1

¹strongly disagree=1; disagree=2; neutral=3; agree=4; strongly agree =5

Launch of the Plan

Twelve individuals participated in the launch of the plan. Participants were asked to evaluate the plan and the implementation strategy. 13 participants evaluated the plan; 11 evaluated the implementation strategy.

Item averages for the evaluation of the plan ranged from 3.2 to 4.1 (items coded on a 5-point agreement scale, with 5=strongly disagree and 1=strongly disagree) (Table 10). Highest scores reported for “people had enough opportunities to contribute to developing this plan” (average=4.1). Lowest scores were reported for “the process used to develop the plan is clear to me” (average=3.2); also receiving neutral ratings were the items “the purpose of the plan is clear”, the messages identified in the plan are meaningful”, and “overall, I am satisfied with the CWD Education and Outreach Plan”, all with average ratings of 3.3.

Table 10. CWD Education and Outreach Plan Evaluation

Please indicate how much you agree or disagree with the following statements ¹	Average score
The purpose of the plan is clear	3.3
The process used to develop the plan is clear to me	3.2
People had enough opportunities to contribute to developing this plan	4.1
The messages identified in the plan are meaningful	3.3
The sources I trust are identified in the plan	3.5
The channels for delivering messages are appropriate	3.8
Overall, I am satisfied with the CWD Education and Outreach Plan	3.3

¹strongly disagree=1; disagree=2; neutral=3; agree=4; strongly agree =5

Participants were asked if anything important was missing from the plan. 9 participants indicated something was missing from the plan, 1 said nothing was missing. Of those who noted something was missing, those missing pieces included:

- Simplifying the plan
- Inquiring if we would be conducting outreach in suburban areas regarding recreational wildlife feeding by nonhunters
- Continuing APRs in the 3 study counties
- That CWD still has too many questions to be answered
- Multiple comments emphasizing on the importance of testing of deer during the hunting season and frustration that DNR is not doing enough testing

Participants were asked if they attended the Open House at the Montcalm County Fairgrounds on April 23rd. 4 participants had attended, 9 had not. Of those 4 that attended, 2 said they could see how their input shaped the plan; 2 said they could somewhat see how their input shaped the plan.

Item averages for the evaluation of the implementation strategy were similar to the evaluation of the plan, with scores ranging from 3.2 to 3.8 (items coded on a 5-point agreement scale, with 5=strongly disagree and 1=strongly disagree) (Table 11). Highest scores reported for “the process used to develop the strategy is clear” (average=3.8). Lowest scores were reported for “the plan’s implementation strategy is clear to me” and “overall, I am satisfied with the implementation strategy of the CWD Education and Outreach Plan”, both with an average of 3.2.

Table 11. Plan Implementation Strategy Evaluation

Please indicate how much you agree or disagree with the following statements ¹	Average score
The plan’s implementation strategy is clear to me	3.2
The process used to develop the strategy is clear	3.8
The implementation strategy seems feasible	3.5
It is clear to me how several organizations intend to implement this plan	3.5
Overall, I am satisfied with the implementation strategy of the CWD Education and Outreach plan	3.2

¹strongly disagree=1; disagree=2; neutral=3; agree=4; strongly agree =5

Overall Conclusions and Recommendations

- Participation in the focus groups and charrette was disappointing despite robust marketing efforts that included ads on local radio channels, flyers in local businesses, personal invitations, eblasts through MDNR and MSU Extension networks, and steering committee member outreach. Because of the two-year pause and the many factors that changed in that time (e.g., Covid-19, the pause itself, change in the CWD landscape and management of CWD, etc.), it is difficult to know the cause(s) for the low level of participation. The project team suspect that:
 - Covid-19 changed how people perceive disease and risk and reduced capacity and desire to hear about another disease.
 - Disease fatigue is real.
 - Residents in this area had been living with CWD for four years. They had likely already made decisions about how they were going to deal with it personally by the time the charrette occurred.
 - Many people may not have known what an education and outreach plan was and may not have been interested enough to warrant their participation (as opposed to discussing regulations and policies).
 - Two counties may be too large of an area to engage effectively. Potentially traveling longer distances may have prohibited participation as fuel prices were relatively high at the time the charrette took place.
- Because of the factors listed above, it is hard to know the effectiveness of the use of a charrette in this context.
- Despite clear marketing efforts and framing at events that this was to create an education and outreach plan, some participants that attended were disappointed that regulations would not be discussed.
- Much like a dot-to-dot puzzle where three lines are part of a larger picture of an elephant for example, it may have been difficult for participants to understand how charrette activities were strung together to create the plan, and how that plan is connected to regulations and policies they were interested in.
- Rebranding the effort to “co-developing a guide to live with CWD” may have been helpful.
- The design of the charrette and the facilitated engagements within it were well designed and appropriate. The facilitators running them were effective.
- The depth of comments received from participants and their understanding of solutions appeared to be significant as a result of their participation in charrette activities.

- The diversity of perspectives relative to CWD among initial steering committee members and the relationships that were built between them in the early stages of the project were significant. This is especially exciting considering that:
 - some of the charrette preparation tools that they were working within were confusing to them, and likely weren't the most appropriate of tools for the task;
 - the steering committee could have used more time in learning to work with each other and the tools; and
 - some were eager to simply make the education and outreach plan, rather than build the charrette to make the education and outreach plan.

Despite these challenges, this process showed that diverse perspectives can work together and co-create plans and solutions.

- As for the charrette's utility as a tool for other applications, it may be better suited to finding physical solutions in the environment and for issues that have the ability to persist, such as allowable recreational uses in state game areas. Wildlife disease and management issues have a tendency to change quickly and often. They therefore may not lend themselves well to the use of charrettes, unless the decision-makers and stakeholders become efficient in their use and practice and it is accepted that the outcomes from them are temporary (~3 years) and intended to be revisited on a regular basis.
 - If the DNR used charrettes for wildlife disease and management issues, it would be important for decision-makers to work alongside field staff and stakeholders in the public engagement process.
 - There is also a general misunderstanding among the public about how regulations are made and changed within the DNR. Prior to proceeding, an effort may need to be made to explain how the average person can implement and support regulatory and policy change within the agency.
- The focus group conversations revealed two important factors related to CWD:
 - Prisoners may handle carcass removal for some counties. This is a stakeholder group that needs to be included in education and outreach efforts about CWD and other wildlife diseases.
 - There is currently no research on how the prion causing CWD moves through landfill and wastewater systems. Without this information, managers of those systems may be resistant to participate in disposal programs.

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