

## CWMA Professional Development Committee (PDC) 2021 Annual Meeting Report

Ms. Elizabeth Lambert, Committee Chair  
Missouri

### INTRODUCTION

The Professional Development Committee (hereinafter referred to as the “Committee”) submits this Committee Interim Report for consideration by National Conference on Weights and Measures (NCWM). This report contains the items discussed and actions proposed by the Committee during its Interim Meeting in St. Pete Beach, FL, January 13 - 15, 2021. The report will address the items in Table A during the Interim Meeting. Table A identifies the agenda items by reference key, title of item, page number and the appendices by appendix designations. The acronyms for organizations and technical terms used throughout the agenda are identified in Table B. The first three letters of an item’s reference key are assigned from the Subject Series List. The first three letters of an item’s reference key are assigned from the Subject Series List. The status of each item contained in the report is designated as one of the following: **(V) Voting Item:** the Committee is making recommendations requiring a vote by the active members of NCWM; **(I) Informational Item:** the item is under consideration by the Committee but not proposed for Voting; **(A) Assigned Item:** the Committee has assigned development of the item to a recognized subcommittee or task group within NCWM; **(D) Developing Item:** the Committee determined the item has merit; however, the item was returned to the submitter or other designated party for further development before any action can be taken at the national level; **(W) Withdrawn Item:** the item has been removed from consideration by the Committee.

Some Voting Items are considered individually; others may be grouped in a consent calendar. Consent calendar items are Voting Items the Committee has assembled as a single Voting Item during their deliberation after the Open Hearings on the assumption that the items are without opposition and will not require discussion. The Voting Items that have been grouped into consent calendar items will be listed on the addendum sheets. Prior to adoption of the consent calendar, the Committee will remove specific items from the consent calendar upon request to be discussed and voted upon individually.

Committees may change the status designation of agenda items (Developing, Informational, Assigned, Voting and Withdrawn) up until the report is adopted, except that items which are marked Developing, Informational, Assigned or Withdrawn cannot be changed to Voting Status. Any change from the Committee Interim Report (as contained in this publication) or from what appears on the addendum sheets will be explained to the attendees prior to a motion and will be acted upon by the active members of NCWM prior to calling for the vote.

An “Item Under Consideration” is a statement of proposal and not necessarily a recommendation of the Committee. Suggested revisions are shown in **bold face print** by ~~striking out~~ information to be deleted and **underlining** information to be added. Requirements that are proposed to be non-retroactive are printed in **bold faced italics**. Please refer to [www.ncwm.com/publication-16](http://www.ncwm.com/publication-16) to review these documents.

All sessions are open to registered attendees of the conference. If the Committee must discuss any issue that involves proprietary information or other confidential material; that portion of the session dealing with the special issue may be closed if (1) the Chairman or, in his or her absence, the Chairman-Elect approves; (2) the Executive Director is notified; and (3) an announcement of the closed meeting is posted on or near the door to the meeting session and at the registration table. If possible, the posting will be done at least a day prior to the planned closed session.

*Note: It is policy to use metric units of measurement in publications; however, recommendations received by NCWM technical committees and regional weights and measures associations have been printed in this publication as submitted. Therefore, the report may contain references to inch-pound units.*

**Subject Series List**

Education .....	EDU Series
Program Management.....	PMT Series
Other Items.....	OTH Series

**Table A  
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**Table B  
Glossary of Acronyms and Terms**

<b>Acronym</b>	<b>Term</b>	<b>Acronym</b>	<b>Term</b>
CWMA	Central Weights and Measures Association	OWM	Office of Weights and Measures
NCWM	National Conference on Weights and Measures	PDC	Professional Development Committee
NEWMA	Northeastern Weights and Measures Association	SWMA	Southern Weights and Measures Association
NIST	National Institute of Standards and Technology	WWMA	Western Weights and Measures Association
SETG	Skimmer Education Task Group		

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**Details of All Items**  
*(In order by Reference Key)*

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1 **EDU – EDUCATION**

2 **EDU-1 I Professional Certification Program**

3 The NCWM now offers nine professional certification exams and two basic competency exams. The certification  
 4 exams include Retail Motor Fuel Dispensers, Vehicle-Tank Meters, Small Capacity Scales, Medium Capacity Scales,  
 5 Large Capacity Scales, Precision Scales, LPG and Anhydrous Ammonia, Price Verification and Basic Package  
 6 Checking. Reporting on the Price Verification exam begins this year and reporting on the LPG and Anhydrous  
 7 Ammonia will begin next year. The competency exams include Basic Weighing Devices and Basic Liquid-Measuring  
 8 Devices. Professional certifications must be renewed every five years. NCWM has implemented a process to notify  
 9 candidates whose certificates have expired.

10 The exams for Precision Scales and LPG and Anhydrous Ammonia were released in July 2020. Work on developing  
 11 the body of knowledge for mass flow meters will begin in early 2021 followed by packaging and labeling. The  
 12 Committee encourages discussion about priorities for future exams and continuous improvement of the program.

13 In August 2018, the NCWM Board of Directors approved the guidelines for proctoring and implemented the system.  
 14 Proctoring is a vital component of plans to accredit the certification program. Each organization is required to register  
 15 the proctors they intended to use. Proctor qualifications are different for basic competency exams and professional  
 16 certification exams. Therefore, two lists of proctors are maintained. To eliminate conflicts of interest, proctors for  
 17 professional certification exams cannot be immediate supervisors of the candidate.

18 **Number of Proctors Per State** *(as of March 2021)*

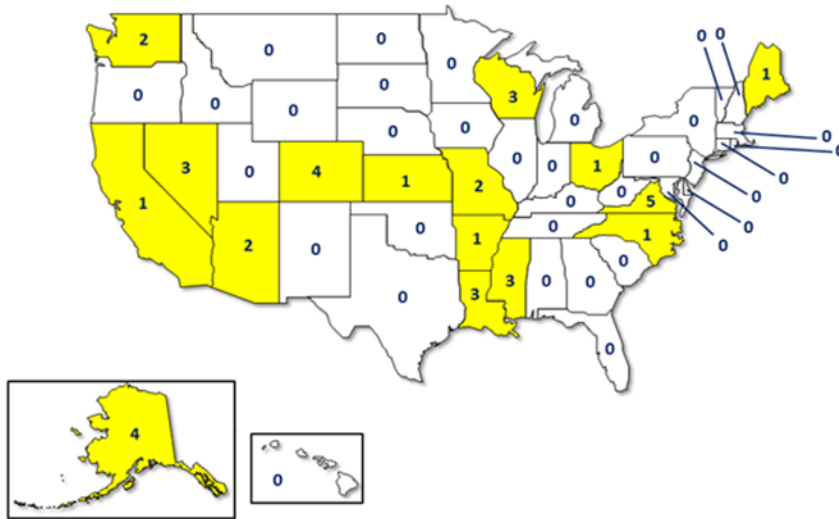
	<b>FY17-18</b>	<b>FY18-19</b>	<b>FY19-20</b>
<b>Basic</b>	39	57	70
<b>Professional</b>	17	28	37

19 **Number of States with Proctors** *(as of March 2021)*

	<b>FY17-18</b>	<b>FY18-19</b>	<b>FY19-20</b>
<b>Basic</b>	10	14	18
<b>Professional</b>	7	11	16

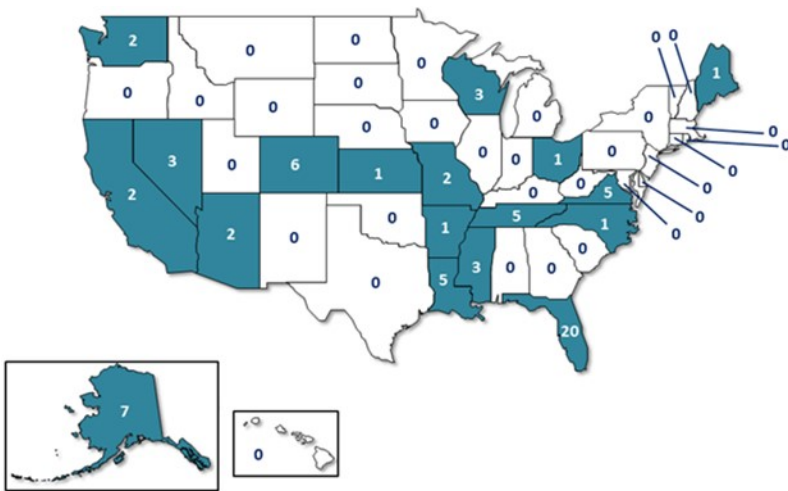
20

1 **Proctors Per State – Professional Certification Exam**



2

3 **Proctors Per State – Basic Competency Exam**



4

5 The requirements for proctors are posted on the NCWM website at [www.ncwm.com/proctoring](http://www.ncwm.com/proctoring).

1 **Status of Current Tests**

2 The NCWM has issued 1,152 professional certificates from the inception of the Professional Certification Program  
 3 to September 30, 2020. Of the certificates issued, twelve have been issued to individuals in the private sector. The  
 4 balance of the certificates has been issued to regulators. There has been a significant decline in participation in the  
 5 program. In FY 17-18, NCWM awarded 257 professional certificates and in FY 18-19, it awarded 53 professional  
 6 certificates, a decline of 79%. Participation improved slightly in FY 19-20 with 56 individuals earning certificates. It  
 7 appears that the decline coincides with the requirement to proctor exams and the pandemic has had an impact on FY  
 8 19-20 participation. Some of the certificates have reached their 5-year expiration and certificate holders will need to  
 9 seek recertification. NCWM notifies certificate holders before expiration to facilitate recertification.

10 **NCWM Professional Certificates issued:**

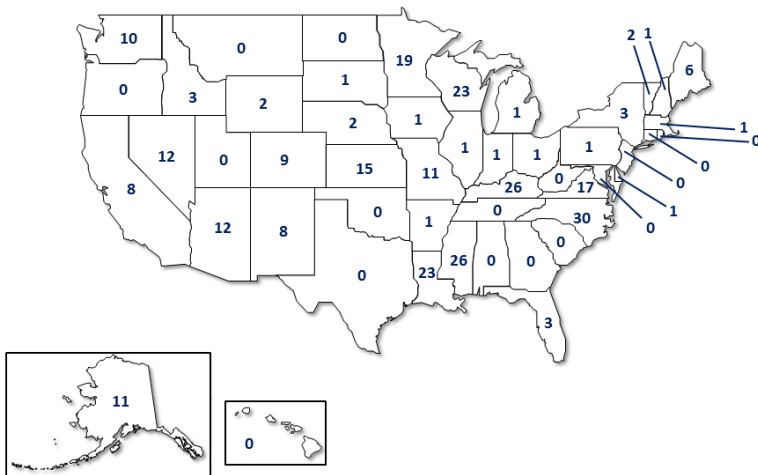
	FY10-11	FY11-12	FY12-13	FY13-14	FY14-15	FY15-16	FY16-17	FY17-18	FY18-19
<b>Exams Passed</b>	44	94	105	62	198	140	142	257	53
<b>Cumulative</b>	44	138	243	305	503	643	785	1,042	1,096

11 **NCWM Professional Certificates issued (cont.):**

	FY19-20
<b>Exams Passed</b>	56
<b>Cumulative</b>	1,152

12 The following map shows the states with individuals holding an active professional certificate in one or more  
 13 disciplines. Please note that the twelve active certificates issued to private sector individuals are included in these  
 14 figures. This data only includes certificates that have not expired as of September 30, 2020.

**Distribution of Certified Professionals per State**  
 Updated: September 2020



15

CWMA PDC 2021 Annual Meeting Report

1 The table below shows the 37 states using the certification program and the number of certificates earned since  
 2 program inception and includes expired certificates. The Committee applauds these states and encourages increased  
 3 use of the certification program nationwide.

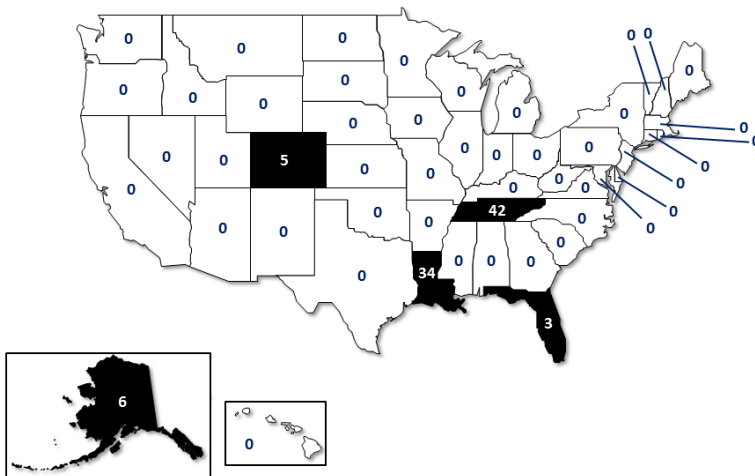
State	Certificates	State	Certificates	State	Certificates
Minnesota	152	Arizona	28	Pennsylvania	7
Missouri	143	Maine	26	Wyoming	7
Wisconsin	84	Nevada	25	Arkansas	6
Maryland	77	New Mexico	23	Delaware	4
Virginia	70	New York	19	Michigan	3
Mississippi	56	Colorado	18	South Dakota	3
North Carolina	52	Connecticut	15	Oregon	2
Washington	50	Indiana	13	Tennessee	2
Kansas	45	Ohio	13	Montana	1
California	41	Private	12	New Hampshire	1
Louisiana	40	Idaho	11	West Virginia	1
Alaska	42	Massachusetts	11		
Nebraska	33	Vermont	8		

4 **NCWM Basic Competency Certificates issued:**

	FY17-18	FY18-19	FY19-20
<b>Exams Passed</b>	1	64	25
<b>Cumulative</b>	1	65	90

5 The following map includes the states with individuals holding a basic competency certificate.

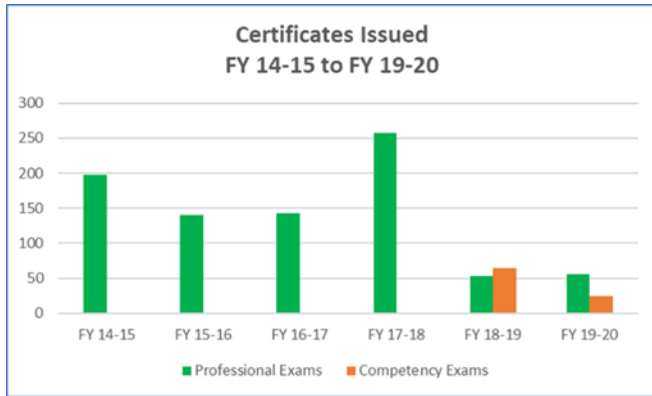
**Distribution of Competency Exams per State**  
 Updated: September 2020



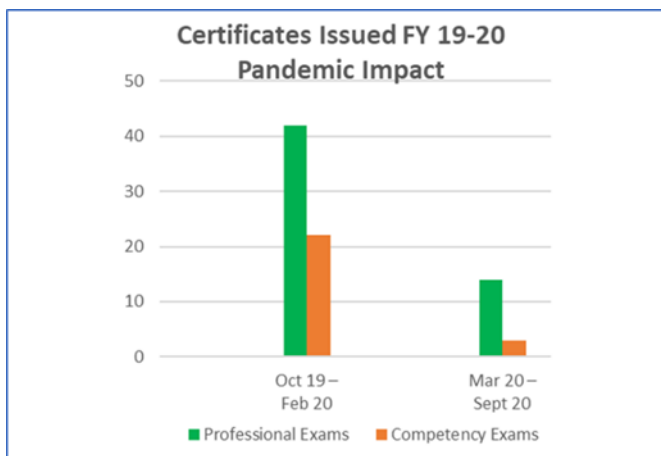
6 The table below shows those states with the highest utilization of the Basic Exams Program. The Committee applauds  
 7 these states and encourages increased use of the certification program nationwide.  
 8

State	Certificates
Tennessee	42
Louisiana	34
Alaska	6
Colorado	5
Florida	3

1 The following graphs show the impact of the COVID-19 pandemic on certifications issued:



2



3

4 NCWM 2020 Interim Meeting: Dr. Bobby Fletcher, Jr. (LA) stated that they have been successful in using state civil  
 5 service offices and university testing facilities for proctoring NCWM exams. Dr. Fletcher also said that Louisiana  
 6 uses successful completion of the exams in the personnel reallocation and promotion process. Mr. Mahesh  
 7 Albuquerque (CO) reported that Colorado’s inspectors are encouraged to take the exams. Mr. Albuquerque also  
 8 expressed concern that the basic exams are more difficult than the Professional Exams. Mr. Albuquerque also asked  
 9 if the basic exams could be more specific to device areas. Mr. Greg VanderPlaats (MN) commented that the  
 10 proctoring rules have made the exam process more difficult. Mr. Ramsburg stated that Maryland has not taken an  
 11 exam since the proctoring requirements went into place. Mr. VanderPlaats added that proctoring is expensive. Mr.  
 12 Ed Coleman (TN) stated that the Basic Competency Exams are more difficult than the Professional Exams. Mr.  
 13 Coleman also expressed concern that the test takers do not have an opportunity to see what questions they missed and  
 14 the correct answers to those questions. Mr. Don Onwiler (NCWM) commented that he had completed an exam at a  
 15 professional learning center and found them to be professional and easy to use. Mr. Onwiler noted that they charge a  
 16 fee for their services. In addition, Mr. Onwiler stated that there are other testing organizations such as colleges or  
 17 professional testing centers that may not need to sign the NCWM proctoring agreement. Mr. Onwiler announced that  
 18 the Professional Certification Program has taken the first step in accreditation. NCWM has contracted with an  
 19 accreditation organization to perform a gap analysis and we should have their report in two or three months. There  
 20 will be an update from the Committee in July.

21 NCWM 2020 Annual Meeting: The NCWM Annual Meeting opened in July 2020, but immediately adjourned that  
 22 meeting due to lack of a quorum brought about by COVID-19 pandemic restrictions. The 2020 Annual Meeting was  
 23 continued virtually in January 2021. Due to time constraints, NCWM presented only voting items to the membership  
 24 during that meeting. Since the PDC’s agenda did not include any voting items its agenda was not presented during  
 25 the 2020 Annual Meeting.

1 NCWM 2021 Interim Meeting: The 2021 NCWM Interim Meeting was held virtually and immediately following the  
2 conclusion of the NCWM 2020 virtual meeting.

3 Mr. Robert Huff (DE) asked if NCWM had considered removing the requirement for proctoring. Mr. Hal Prince (FL)  
4 indicated the Board discussed this possibility and the suspension of this requirement would jeopardize the integrity of  
5 the exams, and would preclude ever reaching accreditation. We are actively pursuing online proctoring and are  
6 hopeful this is something that can be offered soon. Mr. Huff pointed out the decline in participation is obvious and  
7 those that would like to renew are quite possibly unable to do so. Mr. Ethan Bogren (Westchester Co., NY) indicated  
8 his support for exploring remote proctoring and that currently, lack of access to proctoring is preventing access to the  
9 exams for his jurisdiction. Mr. Bogren continued to suggest if access to the exams and/or proctoring was offered as a  
10 benefit of NCWM membership, it could be of value to inspectors, and promote growth of the membership. Ms. Kristin  
11 Macey (CA) asked how remote proctoring would work. Mr. Jerry Buendel (WA, Retired) indicated there are several  
12 providers and tiers of service and they are all being explored. Ms. Angela Godwin (Ventura Co., CA) indicated remote  
13 proctoring is a real need.

14 During the committee work session on January 14, 2021 the members reviewed the post exam surveys provided by  
15 NCWM. Certification Program Coordinator, Mr. Jerry Buendel (WA, Retired), compiled the results and presented  
16 the information to the Committee. The Committee observed that too few examinees were reviewing the learning  
17 objectives in the respective exam module prior to taking the exam. The Committee recommended a review the  
18 NCWM website to determine if examinees were clearly instructed to review the modules and if the modules were  
19 easily accessible. Two survey respondents indicated that it would be beneficial to have a two-step process to indicate  
20 that they had completed the section and that their submissions were final. Mr. Paul Floyd (LA) commented that  
21 Louisiana was requiring more inspectors to take exams. Mr. Floyd noted that the inspectors had a better grasp of the  
22 principles of operation and device exam requirements and as a result were doing more thorough inspections and were  
23 more confident in their findings and determinations.

24 The members of the Professional Development Committee also discussed the expiration dates of individual  
25 certifications during the work session. The Committee recommends the Board of Directors take action to extend the  
26 dates of all certifications expiring between March 2020 and August 2021 to September 2021. The Committee  
27 recognized the difficulties of taking the exams because of restrictions caused by the COVID-19 pandemic as well as  
28 the barriers associated with proctoring. The Committee noted that some jurisdictions or service companies may be  
29 using the exams to justify promotions or require an employee maintain current certification(s) in order to maintain  
30 their current job classification and salary. Mr. Buendel stated that the tests are reviewed annually to determine if any  
31 changes made to the Handbooks would require changes to the exam questions. Mr. Buendel went on to say that in  
32 the past three years he has made only two changes to current exam questions. The Committee also discussed the  
33 precedent that would be set by extending the expiration and concluded that the current extraordinary circumstances  
34 warrant an extension.

35 **Regional Association Comments:**

36 WWMA 2020 Annual Meeting: No comments were received during open hearings regarding this item. The  
37 Committee recognizes the tremendous advantages and value of the NCWM Professional Certification Program and  
38 appreciates the work that many in the community have contributed to the continued operation of the program. The  
39 Committee has read with interest the concerns that some have raised regarding the use of proctors and encourages the  
40 NCWM PDC to review this element of the program.

41 During the NCWM 2020 Interim Meeting, concern was expressed regarding additional costs due to proctoring of  
42 exams. The Committee encourages organizations to seek internal proctors to control expenses and/or explore  
43 applications with the Associate Membership Committee (AMC) to receive funds for this purpose. The Committee  
44 recognizes the challenges imposed in securing a proctor during pandemic restrictions. The Committee encourages  
45 continued research by the Board on various options that may be available to jurisdictions to allow examinations to  
46 continue without interruption during the pandemic.

47 SWMA 2020 Annual Meeting: Chairman Mr. Paul Floyd (LA) commented that efforts would be made to update the  
48 information in this item for the NCWM Annual Meeting. Ms. Tina Butcher (NIST OWM) commented that the  
49 WWMA meeting discussed issues evolving around proctoring exams and additional resources from outside agencies



1 that may need to be acquired. At the WWMA, several jurisdictions shared best practices and approaches for securing  
 2 proctors. Ms. Butcher also noted the NCWM PDC would be interested in hearing the experiences of and input from  
 3 SWMA members on this issue. Mr. Paul Floyd (LA) commented that Louisiana has added another testing center, a  
 4 smaller college in central Louisiana, for both basic and professional exams. Mr. Kenneth Ramsburg (MD) commented  
 5 that they found proctoring was an issue since their Department of Agriculture in Maryland is relatively small and they  
 6 were looking for outside sources to assist in administering the exams. Mr. Ramsburg added that the PDC and NCWM  
 7 missed an opportunity for more exams to be taken by not offering them in an easily accessible online format.

8 NEWMA 2020 Interim Meeting: During its open hearings, the Committee heard comments related to the  
 9 implementation of proctoring for the NCWM Professional Certification Program Exams. Mr. Don Onwiler (NCWM)  
 10 commented that jurisdictions are using various approaches to implement proctoring and shared an example of one  
 11 state that is making use of universities and learning centers for this purpose, which Mr. Onwiler is happy to authorize.  
 12 Mr. Onwiler noted there may be a cost for some of these proctoring arrangements and suggested that jurisdictions  
 13 might consider exploring the possible use of AMC funds for training toward these costs. Ms. Tina Butcher (NIST  
 14 OWM) noted that during discussions at the recent Western and Southern Weights and Measures Association Meetings,  
 15 jurisdictions shared different approaches they have used for proctoring. Ms. Butcher suggested that perhaps this kind  
 16 of shared information of best practices might be beneficial for jurisdictions seeking options to implement this. Mr.  
 17 Ross Andersen (NY, Retired) commented that there is a wealth of information and guidance on the NCWM website  
 18 to assist jurisdictions in the process of securing proctors for these examinations. Mr. Jimmy Cassidy (MA)  
 19 acknowledged the difficulty in coordinating proctoring. Particularly with the restrictions of the COVID-19 pandemic,  
 20 certification and testing of inspectors seems to be at a standstill right now. Mr. Cassidy encouraged the Committee to  
 21 pursue the idea of exploring the use of AMC funding to help jurisdictions certify its inspectors. PDC Chair, Marc  
 22 Paquette (VT) observed there is a need to ensure the integrity of the examination process. Regarding virtual training,  
 23 Mr. Paquette noted that Ms. Butcher will share some of NIST’s work in this area as part of the Committee’s next item.

24 The Committee recognizes the advantages and value of the NCWM Professional Certification Program and  
 25 appreciates the work that many in the community have contributed to the continued operation of the program. After  
 26 hearing some of the concerns regarding the use of proctors, the Committee encourages the NCWM PDC to review  
 27 this element of the program to identify additional ways to assist jurisdictions in implementing it. The Committee  
 28 acknowledges that the COVID-19 pandemic and its associated restrictions have been a setback to jurisdictions in many  
 29 regards, particularly in the areas of training and certification. The Committee also suggested that the NCWM Board  
 30 of Directors may wish to revisit the issue of proctoring and consider relaxing the proctoring until such time that  
 31 jurisdictions can more readily implement it.

32 CWMA 2020 Interim Meeting: Mr. Don Onwiler (NCWM) shared that both Arkansas and Louisiana have asked for  
 33 universities to be authorized to provide proctoring and have been granted that request. Mr. Onwiler mentioned that  
 34 this may be an option for other states to explore as well. Mr. John Albert (MO) added via Zoom chat that Missouri’s  
 35 HR department has agreed to proctor the exams for their employees. Ms. Sherry Turvey (KS) and Ms. Brenda Geist  
 36 (KS) reported that their HR department will not provide proctoring, but Barton County Community College has  
 37 agreed to proctor and is charging by the hour. Ms. Rachelle Miller (WI) added that they have had a difficult time  
 38 with proctoring with the pandemic restrictions but had been able to proctor themselves with the aid of other divisions.  
 39 Ms. Miller also commented that the City of Milwaukee has done the same. Mr. Onwiler (NCWM) noted he has  
 40 suggested that the states that are having issues with proctoring on a large scale could apply for Associate Membership  
 41 Committee (AMC) funding for this purpose.

42 Mr. Greg VanderPlaats (MN) shared the fact that Minnesota has not done any professional certification tests since the  
 43 proctoring requirement was put in place. They used the testing heavily before that but are having difficulties finding  
 44 the time to find anyone to proctor for them.

<b>CWMA Report</b>
<p><b>Regional recommendation to NCWM on item status:</b></p> <p> <input type="checkbox"/> Recommend as a Voting Item on the NCWM agenda  <input checked="" type="checkbox"/> Recommend as an Information Item on the NCWM agenda  <input type="checkbox"/> Recommend as an Assigned Item on the NCWM agenda  <i>(To be developed by an NCWM Task Group or Subcommittee)</i>  <input type="checkbox"/> Recommend as a Developing Item on the NCWM agenda  <i>(To be developed by source of the proposal)</i>  <input type="checkbox"/> Recommend Withdrawal of the Item from the NCWM agenda  <i>(In the case of new proposals, do not forward this item to NCWM)</i>  <input type="checkbox"/> No recommendation from the region to NCWM  <i>(If this is a new proposal, it will not be forwarded to the national committee by this region)</i> </p>
<p><b>Comments and justification for the regional recommendation to NCWM: <i>(This will appear in NCWM reports)</i></b></p> <p>No comments received.</p>

1 **EDU-2 I Training**

2 The purpose of this item is to share best practices and approaches to training in response to the broad training needs  
 3 of weights and measures jurisdictions and to serve as a link to various training materials on the web.

4 At the 2019 Interim Meeting, the Committee was asked to consider reviewing and potentially updating/reintroducing  
 5 the old NIST OWM training modules. The Committee agreed to investigate whether these modules are still available  
 6 in digital form. Mr. Ross Andersen (NY, Retired) indicated that NIST has extensive training materials that we could  
 7 leverage; requesting these materials from NIST may be beneficial.

8 The Committee also heard updates from several sources announcing upcoming device training hosted by Kansas and  
 9 about upcoming combined NIST regional weights and measures metrology training. Three states recommended that  
 10 NCWM and NIST OWM consider joint development of training videos and investigate funding from additional  
 11 sources such as grants.

12 NCWM 2019 Annual Meeting: Mr. Christopher Guay (AMC, Procter & Gamble) asked if webinars or other NIST  
 13 training could be made available to associate members or industry in general. Ms. Tina Butcher (NIST OWM)  
 14 responded by indicating that such training is already possible on an as-available basis.

15 NCWM 2020 Interim Meeting: Ms. Tina Butcher (NIST OWM) has continued to provide updates on training  
 16 provided to the weights and measures community by NIST OWM. During the Committee’s 2020 NCWM Interim  
 17 Meeting open hearings, Ms. Butcher presented the following updated information, which includes NIST OWM  
 18 training conducted in the calendar year 2019 as well as training planned for 2020. Based upon a previous request  
 19 from the Committee, these updates are based on the calendar year. Ms. Butcher noted that some training events listed  
 20 for 2020 are still being negotiated with the hosts so specific dates are not yet available.

21 A complete list of upcoming OWM training events is available on the calendar of events on the OWM website at  
 22 <https://www.nist.gov/pml/weights-and-measures/about-owm/calendar-events>.

23 Ms. Butcher encouraged those interested in a training event to review the details for the event at the above website for  
 24 information such as the availability of the class, intended audience, and any prerequisites. Given the Committee’s  
 25 report includes information for Committee activities in both 2020 and 2021, the “Summary of NIST OWM Training  
 26 Conducted in 2019” is included in this report. To avoid confusion between the 2019 Summary and the “Summary of  
 27 NIST OWM Training Summary Conducted in 2020” included later in this report, the summary is included as  
 28 Appendix A to this report.

1 Ms. Butcher thanked the jurisdictions who have hosted the many NIST training seminars, recognizing the effort  
 2 required to host these events and coordinate the logistics. Ms. Butcher also recognized co-instructors who have  
 3 assisted in presenting these events.

4 The Committee heard comments from several people who commented jointly on Item EDU-2 and EDU-3. Ms. Fran  
 5 Elson-Houston (OH) expressed appreciation for the NIST seminars and also noted that her agency is not always able  
 6 to provide raises or monetary recognition for employees, but she has found that another way to reward and leverage  
 7 good employees is providing them the opportunity to participate in train-the-trainer type of education and present  
 8 training seminars. Mr. Doug Rathbun (IL) echoed Fran’s comments regarding the value of NIST classes. Mr. Charlie  
 9 Stutesman (KS) also recognized the value of the NIST seminars and noted, that jurisdictions or individuals who are  
 10 aware of NIST training and are not leveraging this training are missing out on a great opportunity for quality education.

11 NCWM July 2020 Virtual Technical Sessions: During its virtual technical discussions in July 2020, the Committee  
 12 heard a presentation from Ms. Tina Butcher (NIST OWM) on NIST OWM training activities during the period of  
 13 January 2020 to July 2020. This included training and activities in three of the OWM’s programs, including the  
 14 Laboratory Metrology Program; the Laws and Metric Program; and the Legal Metrology Devices Program. Ms.  
 15 Butcher reported all three programs have made a concerted effort to provide training and professional development  
 16 resources for weights and measures jurisdictions and service companies since the onset of the COVID-19 pandemic.  
 17 Ms. Butcher provided a summary of the support provided by each program area. This information has been  
 18 incorporated into the summary report for the 2020 calendar year provided by Ms. Butcher during the 2021 NCWM  
 19 Interim Meeting.

20 NCWM 2020 Annual Meeting: The NCWM opened an annual meeting in July 2020 but immediately adjourned that  
 21 meeting due to lack of a quorum brought about by COVID-19 pandemic restrictions. The 2020 Annual meeting was  
 22 continued virtually in January 2021. Due to time constraints, the NCWM presented only voting items to the  
 23 membership during that meeting. Since the PDC’s agenda did not include any voting items its agenda was not  
 24 presented during the NCWM 2020 Annual meeting.

25 NCWM 2021 Interim Meeting: The 2021 Interim Meeting was held virtually and immediately following the  
 26 conclusion of the NCWM 2020 virtual meeting.

27 Ms. Cheryl Ayer (NH) asked if NIST OWM was continuing work on providing an on-demand video for small capacity  
 28 scale field inspection. Dr. Doug Olson and Ms. Tina Butcher (NIST OWM) both indicated the plan was to continue  
 29 that project. Multiple comments from the membership were heard thanking NIST OWM for the training provided.  
 30 The comments indicated this training was invaluable during the COVID-19 pandemic.

31 Ms. Butcher provided the following “Summary of NIST OWM Training Conducted in 2020” along with information  
 32 regarding other training and professional development resources OWM has provided for weights and measures  
 33 jurisdictions and service companies in the past year, including projects to assist those whose activities were restricted  
 34 due to the COVID-19 pandemic.

<b>Summary of NIST OWM Training Conducted in 2020</b>			
<b>Area/Course Name</b>	<b>Start Date</b>	<b>Location</b>	<b>No. of Students</b>
<b>Laboratory Metrology</b>			
Balance & Scale Calibration Uncertainties	01/27/20	Gaithersburg, MD	8
Fundamentals of Metrology	02/03/20	Gaithersburg, MD	8
	02/10/20	Gaithersburg, MD	8
Fundamentals of Metrology & LAP Problems Preparation	09/16/20	Web-based	8
Mass Metrology Seminar	03/02/20	Gaithersburg, MD	8
<b>Regional Measurement Assurance Programs</b>			
MidMAP	10/06/20	Web-based	24
NEMAP	04/20/20	Web-based	16
SEMAP	04/20/20	Web-based	33

SWAP	05/04/20	Web-based	24
WRAP	05/04/20	Web-based	27
<b>Webinars</b>			
Basic Uncertainty Concepts	03/05/20	Web-based	3
Calibration Certificate Evaluation	02/25/20	Web-based	12
Conducting an Effective Management Review	02/13/20	Web-based	12
Info Hour – Mentoring and On-the-Job Training	08/04/20	Web-based	58
Info Hour – Quality Management System & SAP Reviews	10/13/20	Web-based	58
Internal Auditing Best Practices	02/27/20	Web-based	14
Software Verification & Validation	02/20/20	Web-based	6
State Laboratory Annual Submission Process	09/10/20	Web-based	95
<b>Laws and Metric Program</b>			
<b>Packaging &amp; Price Verification</b>			
Handbook 130 – Examination Procedure for Price Verification <i>13 Sessions:</i> 03/25/20; 04/08/20; 04/13/20; 04/14/20; 04/16/20; 04/20/20; 04/21/20; 05/19/20; 06/16/20; 07/22/20; 09/22/20; 10/14/20; 12/01/20	13 sessions May to December 2020	Web-based	Total 599
Handbook 130 – Overview of the Uniform Packaging and Labeling Regulation <i>11 Sessions:</i> 03/26/20; 04/09/20; 04/15/20; 04/17/20; 04/22/20; 04/24/20; 05/21/20; 06/17/20; 07/23/20; 10/14/20; 12/1/20	11 sessions March to December 2020	Web-based	Total 562
Handbook 133 – Checking the Net Contents of Packaged Goods <i>8 Sessions:</i> 04/23/20; 04/27/20; 04/29/20; 04/30/20; 05/20/20; 06/18/20; 08/05/20; 10/15/20	8 sessions April to October 2020	Web-based	Total 420
Handbook 133 – How to Test Animal Bedding <i>6 Sessions:</i> 09/21/20; 09/30/20; 10/8/20; 10/21/20; 11/18/20; 12/09/20	6 sessions September to December 2020	Web-based	Total 179
Handbook 133 – Overview of Handbook 133	12/03/20	Web-based	74
Weights and Measures Inspections – Evidence, Search and Seizure, and Due Process <i>6 Sessions:</i> 09/22/20; 10/01/20; 10/08/20; 10/20/20; 11/17/20; 12/08/20	6 sessions September to December 2020	Web-based	Total 613
<b>Metric Education</b>			
Info. Session – Metric Education Resources	09/12/20	Web-based	9
	09/30/20	Web-based	6
Info. Session – Metric Estimation	09/16/20	Web-based	4
	09/26/20	Web-based	6
Measurement System Basics – SI and US Customary Units for Regulatory Officials	08/12/20	Web-based	65
	10/21/20	Web-based	68
<b>Legal Metrology Devices</b>			
No training seminars were offered in 2020.	--	--	--

1 A summary of activities in each OWM Program area follows.

2 **Laboratory Metrology Program**

3 The following summarizes activities in the NIST OWM Laboratory Metrology Program:

4 **General.** The Laboratory Metrology Program conducted several in-person classes prior to the COVID-19 pandemic  
5 restrictions imposed in March 2020. This program also developed a web-based Fundamentals of Metrology and LAP

1 Problems Preparation Course. These courses will be used to provide formalized training to new Metrology staff until  
 2 in-person training resumes.

3 OWM is also pleased to announce that Dr. Micheal Hicks was appointed as Program Leader for the NIST OWM  
 4 Laboratory Metrology Program in Fall 2020.

5 **Regional Metrology Association Training.** All regional metrology association training was converted to a virtual  
 6 format and the training was conducted online. Special topics included “Roundtable Discussions” and “Proficiency  
 7 Testing Reporting and Planning.”

8 **Upcoming Lab Program Training.** The Laboratory Program is continuing to schedule online training as outlined in  
 9 the OWM Calendar of Events. The Program is scheduling some on-site training for June 2021; however, the plans to  
 10 conduct this training on-site is contingent upon the re-opening of the NIST campus. As the date of the training  
 11 approaches, there may be a need to shift the training to a virtual format. Consequently, registered students are  
 12 cautioned *NOT* to make travel arrangements pending written confirmation. Note that the decision to propose this  
 13 particular training in an in-person format so far in advance in light of the uncertainty of conditions is based on the  
 14 States’ laboratory metrologists’ dependency on training required for designated signatories for calibration services  
 15 and OWM’s long lead time for securing contract trainers.

16 **Laws and Metric Program**

17 **General.** The Laws and Metric Program cancelled all previously scheduled in-person courses as of April 2020 due to  
 18 the COVID-19 pandemic. As of June 2020, OWM opened its webinars to industry at no charge. All “in-person” field  
 19 inspection classes are postponed until further notice. OWM is not currently scheduling any in-person field inspection  
 20 classes for the 2021 calendar year.

21 **Webinar Offerings.** Since April 2020, a total of 2,352 students have participated in Laws and Metric Program  
 22 webinars. This includes training for 2194 students in the area of Laws and Regulations and training for 158 students  
 23 in other Laws and Metric Program areas.

24 In April 2020, the Laws and Metric Program’s Mr. David Sefcik began offering three previously developed webinars  
 25 and continued offering these at periodic intervals through December 2020.

- 26 • Examination Procedure For Price Verification, Handbook 130 (2 hr)
- 27 • Overview of the Handbook 130, Uniform Package and Labeling (UPLR) and Uniform Method of Sale (MOS)
- 28 of Commodities Regulations (2 hr)
- 29 • “Handbook 133 – Checking the Net Contents of Packaged Goods - Overview ” (2.5 hr)

30 In September 2020, the Laws and Metric Program began offering three new webinars developed by Mr. Ken Butcher  
 31 and presented by Mr. David Sefcik. These were offered at periodic intervals through December 2020.

- 32 • **Handbook 133 – How to Test Animal Bedding**
  - 33 ○ Covers the different types of animal bedding, method of sale, test equipment, audit and test procedure,
  - 34 and documentation and evaluation of test results.
- 35 • **Handbook 133 – Overview of Handbook 133**
  - 36 ○ Covers the different types of mulch and soil and how they are sold (method of sale), the labeling
  - 37 requirements, test equipment, sampling (and alternative sampling), test procedure, and evaluation of test
  - 38 results.
- 39 • **Weights and Measures Inspections – Evidence, Search and Seizure, and Due Process**
  - 40 ○ Provides an overview on how the U.S. Constitution, the Bill of Rights, Laws, and Court decisions control
  - 41 how weights and measures inspections must be conducted. You will learn about the powers and duties
  - 42 of the Director and the special police powers of an official, as outlined in Handbook 130, Uniform
  - 43 Weights and Measures Law.
  - 44 ○ Topics include a checklist for “opening” and “closing” an inspection; consent; search and seizures under
  - 45 the 4<sup>th</sup> Amendment of the U.S. Constitution; defining evidence and provide suggestions on collecting,

1 protecting and using it to support enforcement actions evidence; enforcement actions and recommended  
2 compliance procedures; and model guidelines for the administrative review process.

3 **Legal Metrology Devices Program**

4 **General.** As with the two other OWM program areas, the Devices Program was forced to postpone the following  
5 training courses originally scheduled during the period of April 2020 to May 2021:

- 6 • High Precision Scales (CWMA)
- 7 • Vehicle Scales (VA)
- 8 • Liquefied Petroleum Gas Liquid-Measuring Devices (SD)
- 9 • Retail Motor-Fuel Dispensers (LA)
- 10 • Vehicle-Tank Meters (CA)
- 11 • Vehicle-Tank Meters (AL)

12 All “in-person” field inspection classes are postponed until further notice. OWM is not currently scheduling any in-  
13 person field inspection classes for the 2021 calendar year.

14 While the Devices Program did not have materials ready to present in a virtual format, the Devices Program staff  
15 worked to develop other tools and information that could assist weights and measures officials and service personnel  
16 working from home on their personal professional development during the restrictions of the pandemic. The Devices  
17 Program is exploring the development of webinars in the device inspection area.

18 **Study Guides.** Mr. John Barton, Ms. Tina Butcher, and Ms. Diane Lee of the Devices Program staff along with Ms.  
19 Lisa Warfield of the Laws and Metric Program staff developed a series of seven “study guides” to assist field  
20 inspectors and service personnel working from home or otherwise restricted from routine activities during the COVID-  
21 19 pandemic. These study guides are designed for use by weights and measures officials and service personnel to  
22 enhance and strengthen their knowledge of specific areas of legal metrology inspection and testing and are intended  
23 for use even after the restrictions of the pandemic are lifted.

24 The study guides are not intended to be a comprehensive summary of all training and development opportunities  
25 recommended for inspectors working in a specific topic area. Rather, they are intended to help individuals in their  
26 professional development by targeting the use of information and resources available on the NIST OWM website.  
27 Study guides are particularly ideal for use by individuals who are working remotely and are striving to enhance and  
28 strengthen their technical knowledge.

29 Included in each study guide are the following:

- 30 • An overview of resources available on the NIST OWM website, including self-study course material; videos;  
31 and newsletter articles and guidance documents on legal metrology issues.
- 32 • Suggestions for how each of these resources might be used for either independent, individual study or by  
33 groups of inspectors/service personnel led by an instructor or supervisor.
- 34 • Information on other training opportunities, including both on-line training and in-person instructor-led  
35 training and other resources for professional development.
- 36 • These study guides are intended for use in conjunction with other resources on the NIST OWM website,  
37 including Handbooks 44, 130, and 133.

38 Study guides have been developed and posted on OWM’s web site for the following field inspection areas:

- 39 • Grain Moisture Meters and NIR Grain Analyzers
- 40 • Measuring – Retail Motor-Fuel Dispensers
- 41 • Measuring – Large Meters
- 42 • Measuring – Liquefied Petroleum Gas Liquid-Measuring Devices
- 43 • Packaging and Labeling Inspections

- 1 • Weighing – Small Scales
- 2 • Weighing – Large Scales

3 These study guides are available for download free of charge at following link:

4 <https://www.nist.gov/pml/weights-and-measures/legal-metrology-devices/training-materials#studyguides>

5 **Technical Article and Knowledge Check for Self-Study.** Mr. Rick Harshman of the Devices Program developed a  
 6 Technical Article titled “Making Sense of “Min” on Class I and Class II Scales.” This explains the concept of “Min”  
 7 and provides guidance on its use and application in transactions encountered by jurisdictions which are reportedly  
 8 regulating a growing number of Class I and Class II scales.

9 Mr. Rick Harshman and Ms. Tina Butcher also developed a new feature called a “Knowledge Check” to accompany  
 10 this article. The Knowledge Check serves as a tool for jurisdictions who might want to quiz their employees on their  
 11 knowledge retention after assigning them the task of reading the article. Depending on feedback, the Devices Program  
 12 may include Knowledge Checks as a regular accompaniment to its technical articles.

13 **General – OWM Training**

14 Ms. Butcher reported all NIST OWM “in-person” field inspection classes are postponed until further notice. OWM  
 15 is not currently scheduling any in-person field inspection classes for the 2021 calendar year. This does not include  
 16 the training referenced under the Laboratory Metrology Program’s summary that is tentatively scheduled for June  
 17 2020 if conditions permit.

18 OWM is not currently making specific commitments for field inspection training pending changes in restrictions  
 19 related to the COVID-19 pandemic that would help ensure the safety of its students and staff involved in such training  
 20 and traveling to attend these events. OWM will continue to assess these conditions as the situation unfolds.

21 It is unclear how pandemic-related restrictions will affect OWM’s in-person training in the future. The decision to  
 22 resume in-person classes will be driven by Centers for Disease Control recommendations local pandemic restrictions,  
 23 and travel restrictions for staff and students. OWM is also considering the impact of social distancing requirements  
 24 on classroom size and configuration and ability to present to groups.

25 In the meantime, OWM will continue to offer virtual training and plans to expand its offerings. Ms. Butcher  
 26 encouraged those interested in upcoming training to consult OWM’s Calendar of Events for the most current  
 27 information:

28 <https://www.nist.gov/news-events/upcoming-events/org/6436>

29 Ms. Butcher shared that, in the latter months of 2020, a team of training developers and facilitators within OWM  
 30 begun working to consider how OWM might restructure its training program to include more virtual offerings. In  
 31 addition to considering which existing (or yet-to-be-developed) courses might lend themselves to training in a virtual  
 32 format, this team has discussed the importance of incorporating some equivalent of the “hands-on” element that is a  
 33 cornerstone of field inspection courses and the distinction between training and technical presentations. OWM is  
 34 exploring the idea that, should resources permit it, it may be possible to record some webinar offerings at some point  
 35 in the future; these could possibly be made available “on demand” and accompanied by periodic question and answer  
 36 sessions with a live instructor. OWM is continuing to explore the use of technology and available features to adapt  
 37 its courses to a virtual format and is also considering whether a “hybrid” approach might be used in which a portion  
 38 of an existing course could be presented virtually and followed by smaller, in-person classes to incorporate a hands-  
 39 on demonstration and student assessment.

40 While this shift in thinking was driven initially by the restrictions of the COVID-19 pandemic, OWM has recognized  
 41 the value of providing virtual courses and training events as a way of providing more training opportunities to a larger  
 42 number of OWM customers. Thus, while OWM expects to resume offering in-person training opportunities when  
 43 conditions once again permit, OWM sees the value of continuing to include a virtual component to its training even

1 when pandemic restrictions are lifted.

2 As OWM considers how to best expand its virtual training offerings, OWM staff have been experimenting with  
3 available technology and tools to best incorporate elements of “hands on” activities that are so important to its field  
4 inspection training courses. OWM is also considering the development of “hybrid” courses in which virtual sessions  
5 are coupled with “hands on” sessions using virtual technology and/or local onsite trainers to help facilitate these  
6 sessions. Such hybrid courses would be intended for use both during the COVID-19 pandemic and after the associated  
7 restrictions are lifted.

8 Ms. Butcher reported that NIST OWM is outfitting a space at NIST OWM specifically suited to conduct virtual  
9 training events and web-based meetings. OWM trainers are continuing to participate in a variety of training courses  
10 as part of their own professional development, including education in virtual training design, development, and  
11 delivery as well as instructional design.

12 Ms. Butcher once again thanked the jurisdictions who have hosted the many “in-person” NIST training seminars in  
13 the past, recognizing the effort required to host these events and coordinate the logistics. Ms. Butcher also recognized  
14 co-instructors who have assisted in presenting these events. NIST OWM looks forward to continued work with the  
15 weights and measures community to develop and implement training to assist weights and measures officials and  
16 service personnel in their continued professional development.

17 **Regional Association Comments:**

18 WWMA 2020 Annual Meeting: Ms. Tina Butcher (NIST OWM) provided a presentation on NIST OWM training  
19 activities during the period of January to July. Ms. Butcher noted that this presentation was provided during the  
20 NCWM PDC’s virtual meeting in July 2020. Ms. Butcher highlighted OWM’s efforts to support weights and measures  
21 jurisdictions by providing training and other professional development materials in a virtual format during the time  
22 that restrictions of the COVID-19 pandemic prevented field inspectors and service personnel from working in field  
23 installations.

24 Ms. Butcher also noted OWM is taking the opportunity to consider how this virtual training might be incorporated  
25 into OWM’s regular training offerings and rather than just adding in virtual classes. OWM is trying to be strategic in  
26 considering how virtual offerings can be integrated into OWM’s overall training program even following the  
27 pandemic. In the future, OWM may offer multiple formats and consider hybrid approaches such as presenting the  
28 lecture portions online and conducting hands-on portions in person with smaller classes held back-to-back. OWM is  
29 considering various approaches that might not only help its trainers to continue to provide training during the pandemic  
30 restrictions, but that would also allow OWM to reach more people than is possible with in-person classes alone. OWM  
31 is mindful that a very important part of the in-person classes is the hands-on portion, so it is necessary to consider  
32 different options to ensure what is provided will still meet the needs of the jurisdictions and students. There may be  
33 various combinations of options that could be used.

34 The Committee heard comments from Ms. Cadence Matijevich (NV) who commented that Nevada appreciates all the  
35 work that NIST did to provide virtual training during the pandemic. The options provided allowed field inspectors  
36 who were not able to do normal inspection work to spend time on professional development, making lemonade out of  
37 lemons. She expressed an appreciation for all the training and resources provided by NIST OWM. Ms. Michelle  
38 Wilson (AZ) echoed Cadence’s comments. Ms. Wilson asked if NIST has considered recording training events and  
39 posting the videos as “on demand” training, noting this would be particularly helpful for new inspectors. Ms. Wilson  
40 also asked about the use of field trainers to supplement the “hands on” portion of classes, with the idea that the field  
41 trainers might be able to conduct demonstrations to accompany the online training. Ms. Kathy de Contreras (CA)  
42 encouraged NIST to continue to offer these types of classes and the use of webinars and train-the-trainers.

43 Ms. Butcher noted OWM has considered the idea of on-demand training. A drawback, particularly for more complex  
44 topics is the lack of ability for a student to ask questions during the seminar. However, OWM has also considered the  
45 idea of developing recorded presentations and supplementing that with periodic Q&A sessions as a follow-up. She  
46 noted OWM is also open to ideas for ways to incorporate alternatives for the hands-on portions through video and  
47 other technology links with field sites.



1 SWMA 2020 Annual Meeting: Ms. Tina Butcher (NIST OWM) gave a presentation on item EDU- 2 which included  
 2 an overview of web-based training and other developmental resources offered by NIST OWM between January and  
 3 July 2020. The presentation gave statistics on participants the program reached. Mr. Paul Floyd (LA) thanked Mrs.  
 4 Butcher and NIST OWM for developing and offering the webinars. Mr. Phillip Wright (TX) followed up with  
 5 comments thanking Ms. Butcher and NIST OWM and that he was encouraged to see the direction of the training  
 6 program. Mr. Kenneth Ramsburg (MD) again thanked NIST OWM for being supportive and producing a robust  
 7 training program and said he and his staff appreciated the trainings and attended trainings for price verification, and  
 8 Laboratory Metrology. Mr. Ramsburg also commented that webinars for Service Companies and Technicians would  
 9 be beneficial beginning with the retail motor fuel dispenser companies. Mr. Ramsburg noted that, due to COVID-  
 10 19 pandemic restrictions, service companies are not attending their jurisdiction’s normal service person training; with  
 11 the relatively high turnover in the service industry, this has created a gap in service personnel’s knowledge of legal  
 12 metrology requirements. Mr. Ed Coleman (TN) thanked NIST OWM for the trainings and agreed with Mr.  
 13 Ramsburg that a webinar program for Service Companies and Technicians would be a great addition.

14 NEWMA 2020 Interim Meeting: Ms. Tina Butcher (NIST OWM) provided a presentation on NIST OWM training  
 15 activities during the period of January to July. Ms. Butcher noted that this presentation was provided during the  
 16 NCWM PDC’s virtual meeting in July 2020. Ms. Butcher highlighted OWM’s efforts to support weights and measures  
 17 jurisdictions by providing training and other professional development materials in a virtual format during the time  
 18 that restrictions of the COVID-19 pandemic prevented field inspectors and service personnel from working in field  
 19 installations. Ms. Butcher noted the shift to include more virtual training options has a profound impact on OWM’s  
 20 ability to reach more people than it can for in-person classes alone. Ms. Butcher also noted OWM is taking the  
 21 opportunity to consider how this virtual training might be incorporated into OWM’s regular training offerings rather  
 22 than just adding in virtual classes. OWM is considering how virtual offerings can be integrated into OWM’s overall  
 23 training program even following the COVID-19 pandemic. In the future, OWM may offer multiple formats and  
 24 consider hybrid approaches such as presenting the lecture portions online and conducting hands-on portions in person  
 25 with smaller classes held back-to-back. OWM is considering various approaches that might not only help its trainers  
 26 to continue to provide training during the pandemic restrictions, but that would also allow OWM to reach more people  
 27 than is possible with in-person classes alone. OWM is mindful that a very important part of the in-person classes is  
 28 the hands-on portion, so it is necessary to consider different options to ensure what is provided will still meet the needs  
 29 of the jurisdictions and students. There may be various combinations of options that could be used.

30 The Committee heard comments from Ms. Cheryl Ayer (NH) who expressed interest in having this training available  
 31 to service agencies and the possibility of including online videos of the webinars that could be viewed by service  
 32 agencies. Ms. Butcher noted that, while NIST’s training has been oriented to support regulatory officials in their  
 33 implementation of NIST standards and test procedures, industry has been welcomed into many classes and NIST  
 34 would continue to do so. Ms. Butcher commented that having an industry presence in classes has been very beneficial  
 35 to both the industry participants and regulators alike. Ms. Butcher noted OWM has discussed the possibility of  
 36 recording webinars for future viewing and work is underway in one area of training to explore this possibility. In the  
 37 meantime, OWM will focus on increasing its virtual options. Ms. Butcher also noted that, given the complexity of  
 38 the material, students will likely have questions about specific elements of a training session. OWM is considering  
 39 how to incorporate this into its structure, considering possibilities such as posting of frequent questions supplemented  
 40 by periodic live question and answer webinar sessions on a given class with a live instructor. Mr. Ross Andersen  
 41 (NY, Retired) commented that he has developed and posted videos on YouTube on the technical issue of “d” and “e”  
 42 and encourages others to share similar technical topics via YouTube. While not speaking to the videos posted by Mr.  
 43 Andersen (NY, Retired), Ms. Cheryl Ayer (NH) commented jurisdictions need to ensure the validity and accuracy of  
 44 procedures illustrated in videos posted on YouTube. Mr. Andersen noted the authors of such videos would need to  
 45 take responsibility for ensuring that accuracy.

46 PDC Chair, Mr. Marc Paquette (VT), observed his staff found the NIST offerings to be very beneficial and made  
 47 specific recognition of a newly offered NIST OWM webinar on Evidence, Search and Seizure, and Due process. Mr.  
 48 Paquette encouraged members to check out the virtual offerings NIST is providing. The Committee greatly supports  
 49 the ongoing efforts of NIST OWM in modifying its training opportunities to include more virtual options, particularly  
 50 during the COVID-19 pandemic; this training has met the need of many jurisdictions who have relied on this during  
 51 the restrictions brought on by the pandemic. The Committee encourages jurisdictions and industry to consider the use  
 52 of web-based platforms to extend their own training opportunities through group sessions and training as well as take  
 53 advantage of videos and other training resources available online.

1 CWMA 2020 Interim Meeting: Ms. Tina Butcher (NIST OWM) provided a presentation on NIST OWM training  
2 activities during the period of January to July. Ms. Butcher noted that this presentation was provided during the  
3 NCWM PDC's virtual meeting in July 2020 and at the three prior regional weights and measures association  
4 meetings. Ms. Butcher highlighted OWM's efforts to support weights and measures jurisdictions by providing  
5 training and other professional development materials in a virtual format during the time that restrictions of the  
6 COVID-19 pandemic prevented field inspectors and service personnel from working in field installations. Ms.  
7 Butcher noted the shift to include more virtual training options has a profound impact on OWM's ability to reach  
8 more people than it can for in-person classes alone. Ms. Butcher also noted OWM is taking the opportunity to  
9 consider how this virtual training might be incorporated into OWM's regular training offerings and rather than just  
10 adding in virtual classes. OWM is considering how virtual offerings can be integrated into OWM's overall training  
11 program even following the pandemic. In the future, OWM may offer multiple formats and consider hybrid  
12 approaches such as presenting the lecture portions online and conducting hands-on portions in person with smaller  
13 classes held back-to-back. OWM is considering various approaches that might not only help its trainers to continue  
14 to provide training during the pandemic restrictions, but that would also allow OWM to reach more people than is  
15 possible with in-person classes alone. OWM is mindful that a very important part of the in-person classes is the  
16 hands-on portion, so it is necessary to consider different options to ensure what is provided will still meet the needs  
17 of the jurisdictions and students. There may be various combinations of options that could be used.

18 Ms. Elizabeth Lambert (MO) noted Missouri Lab Manager Mr. Kevin Upshulte and several of their inspectors have  
19 taken the Evidence, Search, and Seizure online course and they all said it was great and they got a lot out of information  
20 out of the course. Ms. Butcher (NIST OWM) noted she will share this feedback with the NIST OWM team  
21 responsible; Mr. Ken Butcher (NIST OWM), who developed the webinar, and Mr. David Sefcik (NIST OWM), who  
22 has been presenting it. Mr. Doug Rathbun (IL) thanked Ms. Butcher and all the people at NIST for their hard work.  
23 Illinois' program has two metrology staff members in training who are anxious to get back to in-person training and  
24 they all appreciate how NIST has stepped up in this and other arenas to present online training. Mr. Ivan Hankins  
25 (IA) concurred and shared he also participated in the "Search and Seizure" webinar and found it jam packed with  
26 information. Mr. Hankins would like to take the seminar again to catch anything he may have missed while taking  
27 notes. Mr. Hankins noted Mr. David Sefcik (NIST OWM) is a wonderful instructor and NIST has done a great  
28 job with this. Mr. Hankins asked if there might be a possibility of having "private tutoring" once you are able to  
29 travel. For example, Mr. Sefcik might travel to Iowa and work one-on-one with individuals or small groups to provide  
30 training. Mr. Hankins noted that it is difficult to have full dialog and get all questions answered during the short space  
31 of a webinar, particularly if the primary mechanism for asking questions is to type questions into a chat box.

32 Ms. Butcher reported that at present NIST OWM is restricted from traveling; however, once travel is once again  
33 permitted NIST OWM will consider various options for delivering training based upon any pandemic-related  
34 restrictions that remain in place. One of these scenarios might include something like Mr. Hankins suggested or even  
35 modified classes in which a much smaller group of students participate in a classroom setting coupled with some  
36 online training in advance. This will depend on the conditions and restrictions. Ms. Butcher also reported that a  
37 small group of OWM staff have been developing a strategy for OWM's online training, not just during the COVID-  
38 19 pandemic restrictions but afterward since this mechanism provides an opportunity to reach far more customers  
39 than in-person alone. Ms. Butcher acknowledged Mr. Hankins point about the challenges of discussions during  
40 a webinar and noted OWM has been considering offering some "Information Hour" sessions (patterned after those  
41 used in the Laboratory Metrology Program) during which a particular technical topic would be discussed in a more  
42 informal format allowing participants to ask questions and discuss technical issues. Ms. Butcher also shared that  
43 another option OWM has used in the past prior to COVID-19 pandemic restrictions is that of conducting a webinar  
44 to a group of people located in the same (or several) rooms. A laptop and projector are set up and logged into a  
45 webinar to be presented by OWM and a microphone is used to provide sound to the group of people in the room.  
46 The webinar is conducted, and participants can ask questions and talk amongst themselves much like a normal, in-  
47 person classroom.

48 Mr. John Albert (MO) made a similar comment via the Zoom meeting chat, sharing they have required all their  
49 inspectors to take this training. Mr. Ivan Hankins noted Iowa has done the same. Mr. Jeff Fantozzi (Erie Co., OH)  
50 commented that following the death of Ms. Fran Elson-Houston, past director of Ohio Weights and Measures, there  
51 have been some challenges getting training events up and running again, and they very much appreciate the training  
52 NIST has been able to provide.

**CWMA Report**

**Regional recommendation to NCWM on item status:**

- Recommend as a Voting Item on the NCWM agenda
- Recommend as an Information Item on the NCWM agenda
- Recommend as an Assigned Item on the NCWM agenda  
*(To be developed by an NCWM Task Group or Subcommittee)*
- Recommend as a Developing Item on the NCWM agenda  
*(To be developed by source of the proposal)*
- Recommend Withdrawal of the Item from the NCWM agenda  
*(In the case of new proposals, do not forward this item to NCWM)*
- No recommendation from the region to NCWM  
*(If this is a new proposal, it will not be forwarded to the national committee by this region)*

**Comments and justification for the regional recommendation to NCWM: *(This will appear in NCWM reports)***

Committee Chair, Elizabeth Lambert (Missouri) provided an intro the item pointing out all in-person field inspection training has been cancelled and OWM is not currently scheduling any in-person field inspection classes for the 2021 calendar year.

Mrs. Tina Butcher (NIST OWM) indicated that NIST OWM field inspection training is still virtual. There have been some in-person classes for Laws and Metrics and Metrology. Mr. David Sefcik (NIST) has presented several beneficial webinars created by Ken Butcher (NIST) that continue to be utilized. She informed the Committee that available training is posted on the NIST OWM “Calendar of Events.” Ms. Butcher posed the idea that for hybrid trainings, participants could gather equipment, like packages for package checking, and perform the training virtually or states could utilized smart phones to bring information into the classroom for demonstrations. She indicated that NIST is considering how hybrid forms trainings and how off-site trainers that have been utilized in the past might be used to assist in this onsite training in their regions. Ms. Butcher indicated that the virtual options allow NIST to reach far more participants that in-person trainings, but recognize the value of and need for a hands-on component or some means to incorporate that into the training design.

She informed the Committee that NIST may have a better idea in the fall of when they may resume in-person trainings. She also noted that it is not only a matter of obtaining permission to travel that will affect in-person training. When planning an event, the trainers must consider onsite restrictions such as room capacity and social distancing requirements. NIST’s field inspection seminars typically include 25 students seated in close proximity; however, state restrictions may not presently allow for this.

Mr. Charles Stutesman (Kansas) recommended that NCWM and CWMA should start looking at providing training opportunities. While he loves and will continue to utilize the NIST trainings, he would like regional, in-person trainings in order to gain more than what is received during virtual trainings. He also mentioned his comments are not intended to detract from the training NIST provides; he simply wants to see more training opportunities. Since some jurisdictions are able to travel, perhaps a regional training event such as the NIST-led Vehicle-Tank-Meters (VTMs) seminar hosted by Kansas W&M several years ago that was attended by multiple states. In response to a question by Loren Minnich (Kansas) regarding training format, Mr. Stutesman clarified that for some inspection areas, such as VTMs, this needs to include in-person training to allow for “hands-on” activities.

Mr. Ivan Hankins (Iowa) indicated that he would also like to hold in-person trainings in the Central region. He would also like to have hybrid trainings with a portion of the class being virtual but the hands-on aspects could be conducted in-person regionally. Mr. Hankins added that the NIST training films have been a great asset to the states and more video series may help during the transition back to in-person.

Mr. Doug Musick (Kansas) added via Zoom Chat that CWMA could consider models such as having CWMA members teach classes with CWMA providing financial assistance for travel cost or something similar. He added that the challenge would be how to evaluate or select those qualified to teach but indicated that the cost for the teachers could be baked into the registration cost.

1    **EDU-3**                    **I    Instructor Improvement**

2    NIST OWM has provided legal metrology training for weights and measures jurisdictions and industry for many years  
3    but does not have the resources to respond to the numerous training requests it receives. OWM has long recognized  
4    that there are many individuals with extensive legal metrology experience who have the skills needed to provide this  
5    type of training. OWM hopes to draw from this pool to develop trainers who can present schools with NIST, thus  
6    leveraging NIST resources; providing more timely classes; and providing a way to more broadly share the valuable  
7    expertise these individuals possess. In the past ten years, NIST OWM has taken on more field inspection classes than  
8    it would otherwise be able to do because of the co-instructors drawn from its current list of trainers.

9    Over the past ten years, OWM renewed its efforts to develop trainers, including the following:

- 10       • NIST held multiple trainer workshops and webinars designed to assist individuals in the community with  
11       technical expertise to enhance and strengthen their abilities as “trainers.”
- 12       • NIST identified tools and resources to assist trainers in their individual professional development and in  
13       conducting their own self-assessments of their knowledge, skills, and abilities as trainers.
- 14       • NIST provided multiple grants for a combined total of \$212,000 to the NCWM intended to pay travel costs  
15       of individuals to travel within their regions to conduct training and to participate in NIST training for  
16       trainers. This partnership has enabled NIST to bring in candidates for NIST-sponsored training such as  
17       “train the trainer” classes and to participate in NIST technical training schools.
- 18       • NIST has made a concerted effort to involve external co-instructors in numerous NIST training events and  
19       continues to use these co-instructors to the extent possible. Through an application process, in  
20       collaboration with weights and measures directors and nominated training candidates, NIST has identified a  
21       group of people who are now working with NIST to develop the knowledge, skills, and abilities to work  
22       with NIST staff in presenting technical training schools. Several candidates in the NIST Trainer Program  
23       have already served as co-instructors for NIST technical training schools and have done an excellent job.  
24       OWM sincerely appreciates the willingness of those trainers and their directors who have supported their  
25       participation to devote time to making these seminars successful.

26    A list of those who have attended a NIST “Train the Trainer” (TTT) program or associated events has been posted on  
27    the NCWM website. Many people on this list have attended the TTT events and workshops but have not served as  
28    co-instructors for NIST classes and, in some cases, have not attended NIST technical training schools in the topic  
29    areas in which they have declared an interest in serving as trainers and for which they are listed on the website.  
30    Conversely, there are people on this list who have attended the workshops and NIST technical training seminars and  
31    have also served as co-instructors in NIST training seminars. Thus, there is a variation in the experience levels of  
32    individuals on this list, particularly with presenting NIST seminars.

33    OWM has not authorized anyone (external to NIST) to independently present “NIST” classes. NIST training seminars  
34    on field inspection topics are only held a limited number of times each year. This poses a challenge in sustaining  
35    regular interaction and involvement of NIST trainer candidates. Nor does NIST have the resources to develop and  
36    sustain the development of all the individuals that have been invited to participate in the NIST trainer program  
37    activities and events held in the past. However, even if a candidate has not worked directly with NIST staff in  
38    presenting NIST seminars and is not designated to participate as an instructor in a NIST seminar, they and their  
39    jurisdictions can benefit from the experience and the candidate can still provide valuable training in their jurisdiction  
40    and region. Additionally, NIST OWM is authorized by IACET to issue “Continuing Education Units” for certain  
41    training seminars and, as part of this authorization, there are certain provisions that an instructor must follow to meet  
42    these requirements.

43    NIST values the expertise that the co-instructors bring to the NIST training events and plans to continue inviting co-  
44    instructors to NIST training events. Although the funds provided in past grants to the NCWM have been exhausted,  
45    NIST currently plans to pay for the travel expenses of any co-instructor invited to work with NIST on a NIST seminar  
46    and hopes these individuals and jurisdictions will continue to assist NIST in this capacity.

47    OWM appreciates the strong support of the NCWM, the PDC, and the volunteer trainers and their administrators in

1 continuing to develop the TTT program. OWM will continue to provide the Committee with updates on its progress  
 2 as well as continue to collaborate with and support the Committee in its work.

3 The Committee has reiterated multiple times in the past that the responsibility for the training employee rests with  
 4 individual organizations (weights and measures jurisdictions and industry alike). While NIST and other training  
 5 providers offer excellent sources of training and training materials, organizations must develop and manage their own  
 6 training programs, including developing trainers; establishing individual development plans for employees; and  
 7 identifying strategies for continually assessing and responding to training needs. The Committee recognizes that NIST  
 8 OWM cannot possibly train all weights and measures inspectors in the country. The state and municipal jurisdictions  
 9 have ultimate responsibility for training and qualifying their personnel. To fulfill this responsibility, jurisdictions  
 10 should be making individual plans to maintain or bolster their training efforts. NIST OWM should be viewed as one  
 11 vital resource to support that effort. The Professional Development Committee is another resource. The Committee  
 12 has created and posted on its website, the “Body of Knowledge” to establish uniform learning objectives for weights  
 13 and measures professionals. In addition, the Committee has posted a Model Field Training Program document on its  
 14 website. This program outlines methods to evaluate and document training and offers guidance on training new  
 15 inspectors and taking steps to ensure their ongoing development.

16 See the Committee’s past reports for background information on this item along with other details on available tools  
 17 for trainer development and NIST OWM’s efforts and partnership with the NCWM to continue this work.

18 NCWM 2019 Interim Meeting: No comments were heard on this item. Since NIST was not in attendance at the 2019  
 19 Interim Meeting, no updates were available; however, updated information was later provided and included in the  
 20 Committee’s Interim Report.

21 NCWM 2019 Annual Meeting: Ms. Julie Quinn (MN, Retired) suggested that NIST OWM consider allowing  
 22 qualified individuals to take advanced NIST classes if proven capable by means other than passing a basic NIST exam.  
 23 Ms. Rachelle Miller (WI) suggested that for example passing an NCWM professional certification in package  
 24 checking could be a suitable alternate prerequisite for NIST advanced package checking training. NIST OWM  
 25 indicated that they will discuss the possibility of alternate prerequisites. Note: Following the 2019 Annual Meeting,  
 26 NIST decided to restructure its class offerings in this area in such a way that the prerequisite is no longer required.

27 Ms. Michelle Wilson (AZ) stressed the importance of allowing/providing external trainers and requested that those  
 28 trained by NIST via the TTT program be certified as qualified trainers.

29 NCWM 2020 Interim Meeting: The Committee heard several joint comments involving items EDU-2 and EDU-3.  
 30 See item EDU-2 for details.

31 NCWM July 2020 Virtual Technical Sessions: During its virtual technical discussions in July 2020, the Committee  
 32 heard an update from Ms. Tina Butcher (NIST OWM) regarding NIST’s TTT program. Ms. Butcher reported that,  
 33 due to the restrictions of the COVID-19 pandemic which necessitated the postponement of in-person training venues  
 34 for OWM courses, OWM has not done any work in the area of instructor training. However, Ms. Butcher noted OWM  
 35 remains committed to continuing to work with its corps of external trainers and very much appreciates the generosity  
 36 of both the trainers who share their time and expertise as co-instructors as well as that of the administrators who allow  
 37 these trainers to devote time to this work. Ms. Butcher observed she has personally found these trainers bring a wealth  
 38 of knowledge and expertise to the classes and greatly enhance the courses. OWM also looks forward to exploring  
 39 ways in which these trainers can contribute.

40 NCWM 2020 Annual Meeting: The NCWM opened an annual meeting in July 2020 but immediately adjourned that  
 41 meeting due to lack of a quorum brought about by pandemic restrictions. The 2020 annual meeting was continued  
 42 virtually in January 2021. Due to time constraints, the NCWM presented only voting items to the membership during  
 43 that meeting. Since the PDC’s agenda did not include any voting items its agenda was not presented during the  
 44 NCWM 2020 Annual meeting.

45 NCWM 2021 Interim Meeting: The 2021 Interim Meeting was held virtually and immediately following the  
 46 conclusion of the NCWM 2020 virtual meeting. Ms. Butcher indicated that, due to continued restrictions brought

1 about by the COVID-19 pandemic there have been no changes in the status of NIST OWM's work in this area from  
2 what was reported during the Committee's July 2020 Virtual Technical Sessions.

3 The Committee received no comments during the open hearing on this item.

4 **Regional Association Comments:**

5 WWMA 2020 Annual Meeting: Ms. Tina Butcher (NIST OWM) noted OWM has been using external trainers as co-  
6 instructors with great success for some time; however, with the pandemic restrictions has postponed its in-person  
7 classes until conditions allow this again. Ms. Kathy de Contreras (CA) encourages use of the TTT program and to  
8 provide more training sessions to expand the talent pool and to use a hybrid model (webinar and in-person/hands-on  
9 training). Ms. Contreras pointed out that she and other trainers are nearing retirement and urged NIST to consider  
10 opening a new class of TTT so a smooth transition is possible. The use of these local trained staff may allow hands-  
11 on training to continue during times when travel by NIST staff is restricted.

12 Ms. Michelle Wilson (AZ) suggested NIST OWM might consider expanding its concept of instructor training  
13 approach to engage those people who presently serve as co-instructors to provide instruction for the hands-on portions  
14 of the training. Ms. Wilson noted that some instructors have strengths in the area of classroom training and others  
15 may have stronger skills in demonstrating and presenting instruction on field demonstration. Ms. Wilson noted that  
16 some field inspectors have lots of expertise in field inspection procedures, but not as much skill or knowledge of  
17 classroom training of adults. Perhaps if NIST were to provide the classroom portions in an online format and couple  
18 that with the use of these field trainers to provide the hands-on portion, this would play to the field trainers' strengths.  
19 Ms. Butcher noted these are options that OWM has discussed and is open to and welcomes ideas. OWM recently  
20 collected a team of OWM instructors to begin planning how to best move forward with virtual training approaches,  
21 particularly considering the COVID-19 pandemic.

22 SWMA 2020 Annual Meeting: Ms. Tina Butcher (NIST OWM) noted that, given the restrictions of the COVID-19  
23 pandemic, NIST OWM has postponed its previously scheduled in-person training classes. Thus, there are no new  
24 developments in the area of NIST's TTT program. Ms. Butcher noted OWM remains committed to continuing to  
25 work with its corps of external trainers and very much appreciates the generosity of both the trainers who share their  
26 time and expertise as co-instructors and to the administrators who allow these trainers to devote time to this work.  
27 These trainers bring a wealth of knowledge and expertise to the classes and greatly enhance the courses. OWM also  
28 looks forward to exploring ways in which these trainers can play a role in virtual course offerings as well. Mr. Phillip  
29 Wright (TX) commented on the benefits of the TTT program participation and that it also enhanced state training  
30 programs by the trainer participating on the state level as well as bringing back additional knowledge to share.

31 NEWMA 2020 Interim Meeting: The Committee received no comments on this item. The Committee would like to  
32 thank NIST OWM for the continuing work with its TTT program and the contributions of those trainers who continue  
33 to work in cooperation with NIST to extend our collective training resources.

34 CWMA 2020 Interim Meeting: Ms. Tina Butcher (NIST OWM) reported that no work has been done in the area of  
35 instructor improvement since the onset of the COVID-19 pandemic. Ms. Butcher expressed appreciation for the work  
36 done by those trainers in the program and noted that OWM looks forward to continuing to work with these trainers  
37 who have generously shared their expertise during NIST training events. OWM will also consider how these trainers  
38 might collaborate with NIST in delivering virtual training while pandemic restrictions prevent in-person training  
39 events.

40 The Committee received no comments on this item. The Committee would like to thank NIST OWM for the  
41 continuing work with its TTT program and the contributions of those trainers who continue to work in cooperation  
42 with NIST to extend our collective training resources.

<b>CWMA Report</b>	
<b>Regional recommendation to NCWM on item status:</b>	
<input type="checkbox"/> Recommend as a Voting Item on the NCWM agenda <input checked="" type="checkbox"/> Recommend as an Information Item on the NCWM agenda <input type="checkbox"/> Recommend as an Assigned Item on the NCWM agenda <i>(To be developed by an NCWM Task Group or Subcommittee)</i> <input type="checkbox"/> Recommend as a Developing Item on the NCWM agenda <i>(To be developed by source of the proposal)</i> <input type="checkbox"/> Recommend Withdrawal of the Item from the NCWM agenda <i>(In the case of new proposals, do not forward this item to NCWM)</i> <input type="checkbox"/> No recommendation from the region to NCWM <i>(If this is a new proposal, it will not be forwarded to the national committee by this region)</i>	
<b>Comments and justification for the regional recommendation to NCWM:</b> <i>(This will appear in NCWM reports)</i>	
No comments received.	

1 **EDU-4 I Recommended Topics for Conference Training**

2 The Board of Directors has charged the Committee with recommending appropriate topics for the technical sessions  
 3 at future annual meetings. The Board of Directors asks the PDC to review and prioritize possible presentation topics  
 4 and to submit those to the NCWM Chairman. The Chairman will coordinate with NCWM staff to secure presenters.

5 The following is a list of technical presentations made at the NCWM since 2009. Presentations given since 2010 are  
 6 available at [www.ncwm.com/annual-archive](http://www.ncwm.com/annual-archive).

- 7 • Planning and Coordinating a National Market Place Survey (Ms. Rachele Miller, WI, 2017)
- 8 • The Life Cycle of Petroleum from Well to Retail (Mr. Prentiss Searles, API 2017)
- 9 • The United States Mint at Denver – Gold, Coins and Embezzlement (Mr. Thomas Fesing, 2016)
- 10 • Understanding Transportation Network Systems (Ms. Andrea Ambrose Lobato, Lyft and Mr. Bob O’
- 11 Leary, Uber 2016)
- 12 • Regulatory Consideration for Legalized Marijuana (Ms. Julie Quinn, MN and Mr. Nick Brechun, CO 2016)
- 13 • Motor Oil Quality Violations (Mr. Tom Glenn, Petroleum Quality Institute of America, 2014)
- 14 • Making Sense of Electronic Receipts (Mr. Justin Hotard, Vice President and General Manager, NCR
- 15 Corporation, 2014)
- 16 • LNG & CNG Motor Fuel – A Technical Briefing from Industry (Mr. Doug Horne, President CVEF, Mr.
- 17 Zack Wester, Blu, Mr. Jeff Clarke, NGVA, 2014)
- 18 • Taximeter Technology Advancements (Mr. Matt Daus, International Association of Transportation
- 19 Regulators, 2013)
- 20 • Advanced Vehicles and Fuel Quality (Mr. John M Cabaniss, Jr., Association of Global Automakers, 2013)
- 21 • Economic Justification and Demonstrating Value of Weights and Measures (Mr. Tim Chesser, Arkansas
- 22 Bureau of Standards, 2012)
- 23 • Conducting Effective Marketplace Surveys and Investigations (Ms. Judy Cardin, Wisconsin Weights and
- 24 Measures, 2012)
- 25 • Public Relations and Customer Service as Regulators (Mr. Doug Deiman, Alaska Division of Measurement
- 26 Standards/ CVE, 2012)
- 27 • An Overview of Unit Pricing in the United States (Mr. David Sefcik, NIST OWM, 2011)
- 28 • Grocery Unit Pricing in Australia (Mr. Ian Jarratt, Queensland Consumers Association, 2011)
- 29 • Grocery Unit Pricing in Canada (Mr. Ian Jarratt, Queensland Consumers Association, 2011)
- 30 • The U.S. Hydrogen Measuring System: The Turning Point? (Ms. Kristin Macey, California Division of
- 31 Measurement Standards, 2011)
- 32 • Corrosion in Ultra Low Sulfur Diesel Underground Storage Systems (Mr. Prentiss Searles and Ms. Lorri

## CWMA PDC 2021 Annual Meeting Report

- 1 Gainawi, American Petroleum Institute, 2010)
- 2 • Risk-Based Inspection Schemes (Mr. Henry Oppermann, Weights and Measures Consulting, LLC, 2010)
  - 3 • Diesel Exhaust Fluid (DEF) (Mr. Gordon Johnson, Gilbarco, Inc., and Mr. Randy Moses, Wayne, 2009)
  - 4 • Fuel Volatility and Ethanol Blending (Mr. Jim McGetrick, BP Products, 2009)
  - 5 • Investigative Techniques (Mr. Michael Cleary, Retired, 2009)

- 6 At the 2019 NCWM Interim Meeting, the following suggestions from the floor for additional topics were received:
- 7 • Investigative reporting
  - 8 • D.E.F. Testing requirements, special considerations (handling, safety, equipment)
  - 9 • Differentiation between weight classifier and normal rounding scales
  - 10 • Organizing/publishing existing training materials

### 11 NCWM 2019 Annual Meeting:

- 12 • Mr. Tim Chesser (AR) suggested that a review of the NTEP organization, processes and certificate system
- 13 would be a beneficial topic for training in the future.
- 14 • Mr. Steve Harrington (OR) offered diving into innovations / new areas in metrology (perhaps an industry
- 15 presentation on a new technology). Mr. Harrington also suggested that we explore advances in modern
- 16 distributed weighing/measuring systems, e.g., future point-of-sale systems.
- 17 • Mr. Mahesh Albuquerque (CO) suggested the topic of emerging fuels, e.g., EV refueling, hydrogen. Mr.
- 18 Ken Ramsburg (MD) added LNG/CNG as a possibility. Mr. Ramsburg also added the possible topic of the
- 19 new SI unit definitions and possible impact on W&M organizations.
- 20 • Mr. Brett Gurney (UT) indicated that a possible topic could be a ‘case study’ of a successfully implemented
- 21 W&M program (state, county or city) as an example.

22 NCWM 2020 Interim Meeting: Ms. Fran Elson-Houston (OH) suggested training on gravimetric testing of motor oils

23 for either a conference technical training session or a regional training; Mr. Mark Lovisa (LA) suggested training on

24 mass flow meters/master meters.

25 NCWM 2020 Annual Meeting: The NCWM opened an annual meeting in July 2020 but immediately adjourned that

26 meeting due to lack of a quorum brought about by pandemic restrictions. The 2020 annual meeting was continued

27 virtually in January 2021. Due to time constraints, the NCWM presented only voting items to the membership during

28 that meeting. Since the PDC’s agenda did not include any voting items its agenda was not presented during the

29 NCWM 2020 Annual meeting.

30 NCWM 2021 Interim Meeting: The 2021 Interim Meeting was held virtually and immediately following the

31 conclusion of the NCWM 2020 virtual meeting.

32 Ms. Tina Butcher (NIST OWM) offered to develop a technical presentation related to the work their office is doing

33 with master meters. Ms. Cheryl Ayer (NH) and Ms. Rachele Miller (WI) expressed interest. Mr. Charles Stutesman

34 (KS) suggested NIST training on the gravimetric proving process and suggested training on the use of error weights

35 would be valuable.

### 36 **Regional Association Comments:**

37 WWMA 2020 Annual Meeting: No comments were received during open hearings regarding this item. The

38 Committee encourages WWMA members to review the listed training topics and forward suggestions to National

39 Professional Development Committee for future training needs.

40 SWMA 2020 Annual Meeting: SWMA Chairman Mr. Paul Floyd (LA) asked SWMA members to continue to think

41 about possible topics for training and encouraged them to provide their input to the NCWM PDC. The SWMA PDC

42 received no comments for this item.

43 NEWMA 2020 Interim Meeting: The Committee received no comments on this item during its open hearings.

44 However, PDC Chair Mr. Marc Paquette (VT) reviewed some of the suggested training offerings and asked for input

45 from participants.



1 CWMA 2020 Interim Meeting: The Committee received no comments on this item during its open hearings. Acting  
 2 PDC Chairman, Ms. Elizabeth Lambert (MO) encouraged CWMA members to submit suggested topics for training  
 3 to the NCWM PDC.

<b>CWMA Report</b>
<p><b>Regional recommendation to NCWM on item status:</b></p> <p> <input type="checkbox"/> Recommend as a Voting Item on the NCWM agenda  <input checked="" type="checkbox"/> Recommend as an Information Item on the NCWM agenda  <input type="checkbox"/> Recommend as an Assigned Item on the NCWM agenda  <i>(To be developed by an NCWM Task Group or Subcommittee)</i>  <input type="checkbox"/> Recommend as a Developing Item on the NCWM agenda  <i>(To be developed by source of the proposal)</i>  <input type="checkbox"/> Recommend Withdrawal of the Item from the NCWM agenda  <i>(In the case of new proposals, do not forward this item to NCWM)</i>  <input type="checkbox"/> No recommendation from the region to NCWM  <i>(If this is a new proposal, it will not be forwarded to the national committee by this region)</i> </p>
<p><b>Comments and justification for the regional recommendation to NCWM:</b> <i>(This will appear in NCWM reports)</i></p> <p>Mr. Charles Stutesman (Kansas) recommended the topic of gravimetric testing for conference training and provided the example of a propane terminal in Kansas that they are having issues testing with 100 gallon LPG prover. Ms. Tina Butcher (NIST OWM) added that this is a needed training as this is a less commonly used method.</p> <p>Mr. Ivan Hankins (Iowa) indicated there is a need for training on MOS inspections for LPG bottle filling. He has observed many locations charging “by the fill” and sees an issue with equity within the market. Mr. Konrad Crockford (North Dakota) agreed with Mr. Hankins’ observations and indicated that North Dakota is also seeing “by the fill” and sees a complication in uniformity as travel trailers and campers move around the country and may refill in multiple states.</p> <p>Mr. Loren Minnich (Kansas) reiterated there is an issue with equity between fill locations. Mr. John Albert (Missouri) indicated the only locations Missouri allows “by the fill” are LPG bottle fill facilities.</p> <p>Ms. Lisa Warfield (NIST) informed the Committee that NIST is currently working on a two-part LPG training. The training information will be available on NIST’s calendar and will be sent out to the State Directors List Serve. Ms. Tina Butcher added that 60 lb and 100 lb tanks will also be included in the training being developed. Mr. Ivan Hankins noted that he is looking forward to the training.</p> <p>Ms. Tina Butcher asked if Mr. Hankins had envisioned a nation-wide survey for LPG bottle filling and whether there would be a desire for such a study. Both Mr. Ivan Hankins and Mr. John Albert indicated they believe there would be a need for such as study and would be willing to assist with it.</p> <p>Mr. Ivan Hankins suggested the topic of Class II scales for jewelry, cannabis, etc. as a topic for conference training.</p>

4 **PMT – PROGRAM MANAGEMENT**

5 **PMT-1 I Safety Awareness**

6 One of the goals of the PDC is to educate jurisdictions on safety issues and to provide resources to help them  
 7 implement effective safety and health management programs. The Committee intends to use the safety page at  
 8 [www.ncwm.com/safety](http://www.ncwm.com/safety) as a place for states to share information and resources to help them address each of the  
 9 major steps in creating and maintaining an effective safety program.

CWMA PDC 2021 Annual Meeting Report

1 In July 2017, the Board of Directors created the Safety Task Group to create a safety tool kit to help weights and  
2 measures organizations create or improve their own safety programs. The toolkit is complete and is posted on the  
3 NCWM website at [www.ncwm.com/safety](http://www.ncwm.com/safety).

4 At the 2018 Annual Meeting, the NCWM BOD decided to make the task group a permanent subcommittee associated  
5 with the PDC. The newly formed Safety Subcommittee will assume responsibility for:

- 6 • Maintaining and updating the safety toolkit.
- 7 • Writing and deploying the NCWM annual safety survey, as well as reporting on the results each year.
- 8 • Finding resources and/or developing weights-and-measures-focused materials relating to the top hazards  
9 identified through the safety survey or through developing the toolkit.
- 10 • Building a safety culture and developing safety leadership within the NCWM through participation on the  
11 Safety Subcommittee

12 The Safety Subcommittee is currently working to improve the annual safety survey by:

- 13
- 14 • Including questions about near-miss incidents and about incidents resulting in lost or restricted time over  
15 multiple years.
- 16 • Contacting counties and associate members to increase participation.
- 17 • Writing an instruction guide to help participants gather information they need before completing the survey.

18 The results of the 2018 survey were consistent with 2016 and 2017 results. Seven injuries were reported which  
19 resulted in days-away or lost time. All incidents occurred in the field. Five of them were related to  
20 lifting/bending/twisting. The other two were related to slips/trips and falls. Six of the resulting injuries were soft  
21 tissue injuries (sprains, strains, torn joint ligaments, etc.). The remaining injury was a back/neck injury.

22 Although the survey does not currently ask about near-miss incidents, several jurisdictions have shared information  
23 about near-miss incidents which resulted in no days-away or lost time. When the results of all three annual surveys  
24 are compiled, the top four causes of near misses are the same as the top four causes of DART incidents.

25 The following information was provided at the 2019 Interim Meeting:

26 **Summary of 3 Years and 4.3 Million Employee Hours**

<b>Near-Misses = Leading Indicators</b>	
<b>All Near Misses 2016-2018</b>	
<b>Cause</b>	<b># of Near Misses</b>
Vehicle accident	12
Chemical exposure	4
Bending/lifting/twisting	2
Slips/trips/falls	1
Weather	1
Other	1
<b>TOTAL</b>	<b>21</b>

- 27 • Employees report near misses if they think injuries may show up down the road or if property damage was  
28 involved.
- 29 • Employees less likely to report common events like bending/lifting/twisting or slips/trips/falls unless  
30 immediately injured.

<b>Injuries = Lagging Indicators</b>			
<b>All Reported Injuries 2016-2018</b>			
<b>Cause</b>	<b># of Near Misses</b>	<b>60+ Days Lost</b>	<b>60+ Days Restricted</b>
Bending/lifting/twisting	22	6	5

Slips/trips/falls	10	2	1
Vehicle accident	4	1	1
Chemical exposure	1	0	0
Other	1	0	0
<b>TOTAL</b>	<b>21</b>	<b>9</b>	<b>7</b>

- 1 • Same leading causes
- 2 • Vehicle accidents in 2<sup>nd</sup> place (if counting near misses)
- 3 • Once an injury occurs, 20-30% chance of at least 60 days lost!

4 The Safety Subcommittee will focus some of their efforts next year in developing weights and measures materials  
5 related to:

- 6 • Bending/Lifting/Twisting
- 7 • Vehicle Accidents
- 8 • Slips/Trips/Falls
- 9 • Chemical Exposure

10 NCWM members are encouraged to review a complete presentation on the 2018 safety survey on the NCWM website.

11 The Committee expresses appreciation to the members of the Safety Subcommittee for their willingness to volunteer  
12 for this important work.

<b>Safety Subcommittee Members</b>		
Chair	Vacant	
Public Sector Member	Jason Flint	New Jersey
Public Sector Member	Elizabeth Koncki	Maryland
Public Sector Member	Vacant	(CWMA Representative)
Public Sector Member	Mike Sikula	New York
Private Sector Member	Tisha Arriaga	Marathon Petroleum, LLC
Private Sector Member	Bill Callaway	Crompco
Private Sector Member	Remy Cano	Northwest Tank and Environmental Services
Private Sector Member	Robert LaGasse	Mulch and Soil Council
Private Sector	John Lawn	Rinstrum, Inc.

13 Currently the NCWM safety page houses the list of regional safety liaisons and an archive of past safety articles.

14 **Regional Safety Liaisons:**

15 **Central Weights and Measures Association (CWMA)**

16 TBD

17 **Northeastern Weights and Measures Association (NEWMA)**

18 Mr. Michael Sikula, New York Bureau of Weights and Measures

19 **Southern Weights and Measures Association (SWMA)**

20 Ms. Elizabeth Koncki, Maryland Department of Agriculture

21 **Western Weights and Measures Association (WWMA)**

22 Mr. Remy Cano, Northwest Tank and Environmental Services

23 Each region is responsible for providing a safety article for the NCWM newsletter according to the following schedule:

Safety Article Schedule		
Issue 1 (February 2021)	CWMA	January 15, 2021
Issue 2 (May 2021)	NEWMA	April 15, 2021
Issue 3 (September 2021)	SWMA	August 13, 2021
Issue 1 (February 2022)	WWMA	January 15, 2022

1 The Committee would like to thank the following individuals for their contributions since the 2019 Annual Meeting:

- 2 • *Don't Get Zapped* – Mr. Brett Gurney (UT)
- 3 • *Check it out! The Happy-list State* – Ms. Elizabeth Koncki (MD)
- 4 • *Safe Path to Lifting* – Ms. Brenda Sharkey (SD)
- 5 • *The Psychology of Safety* – Mr. Ron Armstrong (NWTES)
- 6 • *Back to Your Health* – Ms. Elizabeth Koncki (MD)
- 7 • *Engineering Controls* – Mr. Mike Sikula (NY)

8 NCWM 2019 Annual Meeting: Mr. Steve Harrington (OR) suggested that we could publish ‘best ergonomic  
9 practices’ in daily weights and measures routines as these tasks undergo hazard analysis, and communicate these  
10 recommendations to avoid repetitive motion injury, etc. during daily tasks as they are developed.

11 NCWM 2020 Interim Meeting: The Committee received no comments.

12 NCWM 2020 Annual Meeting: The NCWM opened an annual meeting in July 2020, but immediately adjourned that  
13 meeting due to lack of a quorum brought about by COVID-19 pandemic restrictions. The 2020 Annual Meeting was  
14 continued virtually in January 2021. Due to time constraints, the NCWM presented only voting items to the  
15 membership during that meeting. Since the PDC’s agenda did not include any voting items its agenda was not  
16 presented during the NCWM 2020 Annual meeting.

17 NCWM 2021 Interim Meeting: The 2021 Interim Meeting was held virtually and immediately following the  
18 conclusion of the NCWM 2020 virtual meeting.

19 Mr. David Aguayo (San Luis Obispo Co., CA), Chair of the PDC, reviewed this item in the absence of the Safety  
20 Subcommittee Chair, Ms. Lori Jacobson (SD). The Committee expressed appreciation to all the regional safety  
21 representatives for their continued contributions. The CWMA Regional Safety Liaison position is currently vacant.  
22 Individuals interested in serving in this capacity should contact the CWMA Chair or Board member.

23 The Committee expresses its appreciation to Ms. Brenda Sharkey (SD), the previous CWMA representative, for her  
24 work.

25 No comments were heard during open hearings.

26 **Regional Association Comments:**

27 WWMA 2020 Annual Meeting: WWMA PDC Chair, Ms. Michelle Wilson (AZ) announced that PDC member Mr.  
28 Remy Cano (Northwest Tank & Environmental Services) has graciously agreed to serve as the WWMA Regional  
29 Safety Liaison to the NCWM Professional Development Committee. Each region is responsible for providing a safety  
30 article for the NCWM Newsletter. Mr. Cano recently prepared and submitted an article to the NCWM on behalf of  
31 the WWMA.

32 SWMA 2020 Annual Meeting: The SWMA PDC wants to acknowledge SWMA’s Safety Liaison to the NCWM, Ms.  
33 Elizabeth Koncki (MD), for her continued work in this capacity and thanks her for her contributions of safety-related  
34 articles to the NCWM Newsletter on behalf of the SWMA. The SWMA PDC received no comments for this item.

35 NEWMA 2020 Interim Meeting: PDC Chair Mr. Marc Paquette (VT) reviewed this item and expressed appreciation  
36 to Mr. Mike Sikula (NY Measures) for his work as NEWMA’s Regional Safety Liaison to the NCWM and the articles  
37 Mike has contributed on NEWMA’s behalf. Chairman Paquette also reported that Ms. Lori Jacobson (SD, Retired)

1 has agreed to serve in the capacity as Safety Liaison. Mr. Paquette also shared that the NCWM has decided to establish  
 2 an additional educational task group on the topic of “Skimmers” as part of the NCWM PDC structure, similar to that  
 3 used for the topic of “Safety Awareness.” This would allow the structure of the PDC to be used to encourage and  
 4 maintain education in these and other technical areas.

5 CWMA 2020 Interim Meeting: Acting PDC Chairman, Ms. Elizabeth Lambert (MO) recognized Ms. Brenda  
 6 Sharkey (SD) for her work as the CWMA’s Safety Liaison to the NCWM. Ms. Lambert thanked Ms. Sharkey and  
 7 recognized a recent safety-related article Ms. Sharkey contributed on CWMA’s behalf to the NCWM Newsletter.  
 8 Ms. Lambert also expressed thanks to Ms. Lori Jacobson (SD, Retired) who has agreed to serve in the capacity as  
 9 Safety Liaison to the NCWM PDC.

<b>CWMA Report</b>
<p><b>Regional recommendation to NCWM on item status:</b></p> <p><input type="checkbox"/> Recommend as a Voting Item on the NCWM agenda</p> <p><input checked="" type="checkbox"/> Recommend as an Information Item on the NCWM agenda</p> <p><input type="checkbox"/> Recommend as an Assigned Item on the NCWM agenda  <i>(To be developed by an NCWM Task Group or Subcommittee)</i></p> <p><input type="checkbox"/> Recommend as a Developing Item on the NCWM agenda  <i>(To be developed by source of the proposal)</i></p> <p><input type="checkbox"/> Recommend Withdrawal of the Item from the NCWM agenda  <i>(In the case of new proposals, do not forward this item to NCWM)</i></p> <p><input type="checkbox"/> No recommendation from the region to NCWM  <i>(If this is a new proposal, it will not be forwarded to the national committee by this region)</i></p>
<p><b>Comments and justification for the regional recommendation to NCWM:</b> <i>(This will appear in NCWM reports)</i></p> <p>Ms. Elizabeth Lambert (Missouri) provided an introduction for this item and informed the region there are vacancies for the positions of CWMA Safety Liaison and NCWM Safety Subcommittee Chair. She shared an update from NCWM Executive Director, Don Onwiler who reported that, at its meeting a couple of weeks ago, the NCWM Board of Directors discussed the position of the NCWM Safety Subcommittee Chair and the difficulty in maintaining the activities of the Subcommittee in the absence of anyone wanting to lead the group. The BoD decided to add an item to the Board’s Annual Meeting agenda to gather input from membership regarding the Subcommittee.</p> <p>Chairman Lambert asked if anyone would be interested in filling either position. Both Mr. Travis Soper (Wisconsin) and Mr. John Bell (Missouri) would like more information on the positions but expressed interest in either position.</p>

10 **PMT-2 I Skimmer Education Task Group**

11 *Note: This is a new agenda item added to the report by the PDC after the Publication 15 printing deadline.*

12 The Skimmer Education Task Group (SETG) held its first meeting during the 2021 Annual Meeting. The SETG is  
 13 made up of industry members, regulatory officials, and interested parties for the purpose of continuing work identified  
 14 by the Specifications and Tolerances (S&T) Committee’s Credit Card Skimmer Task Group. Under the guidance of  
 15 the Professional Development Committee (PDC), the task group will develop education and outreach strategies and  
 16 gather or produce materials to educate regulatory officials, fuel retailers, industry members and consumers on payment  
 17 card information theft via skimming devices. The SETG will provide information and organize education sessions to  
 18 share recommendations for safety procedures and technologies to better protect consumer payment information and  
 19 reduce the risk of skimmer installation at fuel dispensers. The SETG will continue in force until the SETG Chair and  
 20 the PDC Chair agree the work has been completed. The task group may also be disbanded by vote of the NCWM  
 21 Board of Directors. The task group will meet via electronic media, teleconferences, face-to-face meetings or other  
 22 means available.

1 Co-Chair, Ms. Paige Anderson (NACS) provided a report of their meeting held on January 10, 2021 during the open  
2 hearing. Following is a summary of her remarks.

3 The SETG expressed their appreciation for the leadership and assistance of Mr. Hal Prince (FL), the NCWM board  
4 and staff, Mr. David Aguayo (San Luis Obispo Co., CA) and the PDC in helping to create the Task Group. Many of  
5 the task group members worked on the policy item before the S&T to establish user requirements on fuel dispensers  
6 to prevent skimming, and during that time recognized the importance of education and training.

7 The SETG’s mission to educate the membership and bring together all stakeholders in sharing information on  
8 skimming. The SETG recognizes that technology changes, include the devices used to steal debit and credit card  
9 information, the technology to prevent these thefts, and the criminals become more organized and sophisticated.  
10 NCWM provides a powerful platform to bring together all stakeholders – state officials, law enforcement,  
11 manufacturers, service companies, retailers, security providers and consumers.

12 In organizing the task group, it was decided that having co-chairs representing both regulatory officials and the private  
13 sector demonstrates partnership in combatting skimming and the criminal organizations.

14 The SETG held their first meeting on Sunday, January 10, 2021 via web conference. The number of attendees who  
15 attended the meeting was remarkable. It clearly demonstrated that there is a significant need for knowledge on this  
16 issue. The task group discussed and finalized their 2021 goals to:

- 17 1. Establish a library of resources for the public on the NCWM website. The resources will consist of videos,  
18 articles, reports, checklists, contact information, best practices, and other information. The task group  
19 recognized that there may be some sensitive or proprietary data that should not be put on the public-facing  
20 website but may be shared with the membership or a targeted group of the membership. Alternative  
21 distribution methods would be determined and used in these cases. Communicating the availability and  
22 location of these resources to the membership and beyond is an important element of the strategy and project.
- 23 2. Host presentations and briefings from subject matter experts at future NCWM meetings. The task group is  
24 planning to provide such a briefing at the NCWM Annual Meeting in July 2021. The Committee is looking  
25 at 3 key constituencies to provide presentations:
  - 26 • Law enforcement – overview of the landscape of activity on skimming (e.g., U.S. Secret Service)
  - 27 • Private sector security experts – to share what they are seeing and describe the types of technology being  
28 used by the criminals and methods used to combat skimming
  - 29 • Retail/industry – updates on the transition to EMV card readers, etc.

30 The task group is also working to identify other key stakeholders to either present or to join. These key stakeholders  
31 included financial institutions such as banks, credit card providers, and credit unions.

32 The task group welcomes volunteers and encourages participation from all members. If you or your staff are  
33 interested, contact Ms. Paige Anderson (NACS), Mr. John McGuire (NJ), members of the PDC, or the NCWM staff.

<b>Skimmer Education Task Group Members</b>		
Co-Chair	Paige Anderson	NACS
Co-Chair	John McGuire	New Jersey
Public Sector	Bobby Fletcher	Louisiana
Public Sector	John Larkin	California
Public Sector	Mike Harrington	Iowa
Public Sector	Vince Wolpert	Arizona
Public Sector	Scott Borse	PEI
Public Sector	Owen Dewitt	FlintLoc Technologies, LLC
Public Sector	Brent Price	Gilbarco, Inc.
Public Sector	Mike Roach	Invenco Payment Systems
Public Sector	Scott Schober	Berkley Varitronics Systems

- 1 NCWM 2021 Interim Meeting: The 2021 Interim Meeting was held virtually and immediately following the
- 2 conclusion of the NCWM 2020 virtual meeting.
  
- 3 Ms. Kristin Macey (CA) indicated it has been invaluable to share lessons learned and techniques on detecting
- 4 skimmers. Sharing experiences with law enforcement agencies, including local and state law enforcement, FBI, and
- 5 Secret Service is helpful. Ms. Macey recommends the task group continue these conversations.
  
- 6 Ms. Cheryl Ayer (NH) shared that they worked with the Secret Service in November 2020 to inspect dispensers in
- 7 several cities. Ms. Ayer stated that New Hampshire fully supports the Skimmer Education Task Group.

<b>CWMA Report</b>
<p><b>Regional recommendation to NCWM on item status:</b></p> <ul style="list-style-type: none"> <li><input type="checkbox"/> Recommend as a Voting Item on the NCWM agenda</li> <li><input checked="" type="checkbox"/> Recommend as an Information Item on the NCWM agenda</li> <li><input type="checkbox"/> Recommend as an Assigned Item on the NCWM agenda <i>(To be developed by an NCWM Task Group or Subcommittee)</i></li> <li><input type="checkbox"/> Recommend as a Developing Item on the NCWM agenda <i>(To be developed by source of the proposal)</i></li> <li><input type="checkbox"/> Recommend Withdrawal of the Item from the NCWM agenda <i>(In the case of new proposals, do not forward this item to NCWM)</i></li> <li><input type="checkbox"/> No recommendation from the region to NCWM <i>(If this is a new proposal, it will not be forwarded to the national committee by this region)</i></li> </ul>
<p><b>Comments and justification for the regional recommendation to NCWM:</b> <i>(This will appear in NCWM reports)</i></p> <p>Committee Chair, Elizabeth Lambert, stated that this is a new task group that has been established and Mr. Mike Harrington (Iowa) is a member of the new task group.</p>

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- 9 Ms. Elizabeth Lambert, Missouri | Committee Chair
  - 10 Mr. Greg VanderPlaats, Minnesota | Member
  - 11 Ms. Brenda Geist, Kansas | Member
  - 12 Mr. Brian Fuller, Iowa | Member
  - 13 Mr. Ryan Rogers, Hoidale Company | AMC Representative

14 **Professional Development Committee**

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## Appendix A

### Summary of NIST OWM Training Conducted in 2019

(Item EDU-2)

<b>Summary of NIST OWM Training Conducted in 2019</b>			
Area/Course Name	Start Date	Location	No. of Students
<b>Laboratory Metrology</b>			
Advanced Mass Seminar	04/29/19	Gaithersburg, MD	9
Balance & Scale Proficiency Testing	06/03/19	Gaithersburg, MD	8
Fundamentals of Metrology	03/04/19	Gaithersburg, MD	7
	03/11/19	Gaithersburg, MD	9
	03/18/19	Gaithersburg, MD	10
	08/05/19	Gaithersburg, MD	9
	08/19/19	Gaithersburg, MD	8
Mass Metrology Seminar	04/18/19	Gaithersburg, MD	9
	10/21/19	Gaithersburg, MD	10
Volume Metrology Seminar	08/12/19	Gaithersburg, MD	12
<b>Regional Measurement Assurance Programs</b>			
Combined Regional MAP	05/31/19	Lake Mary, FL	107
CRMAP Tutorial 1 – Balance & Scale Calibration Uncertainties	05/31/19	Lake Mary, FL	20
CRMAP Tutorial 2 – Calibration & Use of Thermometers	05/31/19	Lake Mary, FL	16
CRMAP Tutorial 3 – Workshop on Assessing & Reporting Uncertainties	05/31/19	Lake Mary, FL	16
<b>Info Hours</b>			
Info Hour – Annual Submission Process	08/20/19	Web-based	53
Info Hour – Mass Traceability at NIST in the revised SI	12/02/19	Web-based	83
<b>Webinars</b>			
Basic Uncertainty Concepts	04/24/19	Web-based	9
Calibration Certificate Evaluation	08/06/19	Web-based	5
Conducting an Effective Management Review	03/07/19	Web-based	10
Contract Review	08/15/19	Web-based	16
Document Control and Record Keeping	08/29/19	Web-based	14
Internal Auditing Best Practices	02/21/19	Web-based	6
	11/14/19	Web-based	8
Mass Calibration at NIST in the Revised SI	12/10/19	Web-based	83
Software Verification & Validation	04/11/19	Web-based	7
State Laboratory Annual Submission Process	09/12/19	Web-based	70
<b>Packaging &amp; Price Verification</b>			
HB 130 – Uniform Pkg & Label Regs	10/28/19	Avenel, NJ	16
HB 133 – Checking the Net Contents of Packaged Goods, Basic	04/01/19	Gaithersburg, MD	10
	04/15/19	Glendale, AZ	18
	11/05/19	Santa Rosa, CA	16
HB 133 – Checking the Net Contents of Packaged Goods, Overview	10/16/19	Richmond, VA	27
<b>Webinars</b>			
HB 130 – Price Verification	06/18/19	Web-based	17



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HB 130 – Uniform Pkg & Labeling Reg	06/19/19	Web-based	10
HB 133 – Pkg & Labeling Overview	09/03/19	Web-based (NJ)	75
<b>Legal Metrology Devices</b>			
Audit Trails – Overview	09/11/19	Park City, UT (WWMA)	75
Retail Motor-Fuel Dispensers – Short (3-day)	05/06/19	Canton, OH (CWMA)	24
	09/09/19	Park City, UT (WWMA)	13
Liquefied Petroleum Gas Liquid-Measuring Systems	06/24/19	Nashville, TN	16
Vehicle-Tank Meters & Loading-Rack Meters, Combined	06/10/19	Lawrence, KS	26
<b>Webinars</b>			
Audit Trails – Overview	09/04/19	Web-based (NJ)	75

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<b>NIST OWM Training Scheduled for 2020</b>		
Area/Course Name	Dates	Location
<b>Laboratory Metrology</b>		
Advanced Mass Seminar	06/01/20	Gaithersburg, MD
Balance and Scale Calibration Uncertainties	01/27/20	Gaithersburg, MD
Balance and Scale Calibration Uncertainties – IAAO Participants Only	07/13/20	Gaithersburg, MD
Fundamentals of Metrology	02/03/20	Gaithersburg, MD
	02/10/20	Gaithersburg, MD
Fundamentals of Metrology – IAAO Participants Only	07/20/20	Gaithersburg, MD
Mass Metrology Seminar	03/02/20	
	10/19/20	Gaithersburg, MD
Volume Metrology Seminar	04/20/20	Gaithersburg, MD
<b>Regional Measurement Assurance Programs</b>		
Southeast Measurement Assurance Program	03/23/20	Frankfort, KY
Western Regional Assurance Program	05/04/20	Sparks, NV
Northeast Measurement Assurance Program	09/14/20	Hartford, CT
Southwest Assurance Program	09/28/20	Las Cruces, NM
MidAmerica Measurement Assurance Program	10/05/20	Indianapolis, IN
<b>Webinars</b>		
Basic Uncertainty Concepts	03/05/20	Web-based
Calibration Certificate Evaluation (2-day session)	01/23/20	Web-based
Conducting an Effective Management Review	02/13/20	Web-based
Internal Auditing Best Practices	02/27/20	Web-based
Measurement Systems for Legal Metrology	08/12/20	Web-based
Software Verification & Validation	02/20/20	Web-based
<b>Packaging &amp; Price Verification</b>		
HB 130 – Uniform Packaging/Labeling Regs	05/18/20	Sacramento, CA
HB 133 – Checking Net Contents of Packaged Goods, Basic	05/04/20	Saratoga Springs, NY (NEWMA)
<b>Webinars</b>		
HB 130 – Price Verification	03/05/20	Web-based
	07/22/20	Web-based

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HB 130 – Overview Packaging/Labeling Reg	03/26/20	Web-based
	07/23/20	Web-based
HB 133 – Checking Net Contents of Packaged Goods - Overview	08/05/20	Web-based
<b>Legal Metrology Devices</b>		
High-Precision Scales	05/19/20	Wisconsin Dells, WI (CWMA)
Liquefied Petroleum Gas Liquid-Measuring Systems	06/08/20	Sioux Falls, SD
Retail Motor-Fuel Dispensers	05/11/20 (tentative)	[City TBD], LA
Vehicle and Axle-Load Scales	Fall 2020	Harrisonburg, VA
Vehicle-Tank Meters (by invitation only)	04/27/20	[City TBD], CA
<b>Webinars</b>		
Reading Test Measures & Provers	Spring/Summer 2020	Web-based