

# WAQTC QAC COMMITTEE MEETING MINUTES

**CHAIR:** SEAN PARKER, ODOT  
**RECORDER:** DESNA BERGOLD, D B CONSULTING

**DATE:** JULY 18<sup>TH</sup> THROUGH 22<sup>ND</sup>  
**TIME:** 1:00 TO 5:00 PM MON, 8:00 AM TO  
5:00 PM TUES. THRU THUR., 8:00 AM  
TO 12:00 NOON FRI  
**LOCATION:** HYATT PLACE,  
FARMINGTON UT

**ATTENDEES:**

SEAN PARKER, ODOT, CHAIR  
MISTY MINER, MDOT, VICE CHAIR  
DAN GETTMAN, AKDOT & PF  
LORI COPELAND, ITD  
SHARON TAYLOR, NDDOT  
GILBERT ARREDONDO, UDOT  
**VIRTUAL ATTENDEES**  
CHRISTOPHER P. RUSSELL, CDOT  
KEVIN BURNS, WSDOT  
RANDY MAWDSLEY, WSDOT

**ABSENT:**

BRIAN IKEHARA, HDOT  
NASSIM SABAHFAR, WFL-FHWA

**MEETING ITEMS:**

REVIEWS OF AASHTO REVISIONS AND QAC PROPOSED REVISIONS FOR EACH PROCEDURE

1. Revisions to Embankment/Base and In-Place Density Training Materials
  - a. Basics
    - i. Information on backfill (7/1)
    - ii. Revisions proposed by Dan
  - b. T 255/T 265, Moisture Content of Soil (7/1)
    - i. AASHTO revisions (both)
      1. New revision date
      2. Oven in Apparatus revised
    - ii. Microwave wattage not in AASHTO but does state ventilated – Dan
    - iii. Caution note: add crack or explode – Dan
    - iv. Do we want to include the alcohol? – Dan
  - c. T 99/T 180, Moisture/Density Relations (7/1)
    - i. AASHTO revisions (both)
      1. New revision date
      2. Draft oven in Apparatus revised including thermometer reference
    - ii. Add w variable to Step 11
    - iii. Italicize  $\rho$  variables
  - d. R 75, Developing a Family of Curves
    - i. AASHTO no revisions
    - ii. Handout graph correction – Dan
  - e. T 272, One-Point Method

- i. AASHTO – reviewed but not updated 2022
  - ii. Wet density changed to  $\rho_w$
  - iii. All  $\rho$  italicized
  - iv. Add Variables in Steps
  - v. Combined Performance exam (2/23 & 7/1) – Misty
  - vi. Remove extra 4 in ‘Calculations’ example (0303344 ft<sup>3</sup>) – Lori
  - vii. Step 10 duplicate phrase – Dan
- f. T 85,  $G_{sb}$  (7/1)
  - i. AASHTO revisions
    - 1. New revision date
    - 2. Oven and thermometer added in Apparatus
  - ii. Sample container construction from AASHTO – Dan
- g. T 310, In-place Density and Moisture Content of Soil-Aggregate (7/1)
  - i. AASHTO
    - 1. New date
    - 2. Active voice
    - 3. Probe to source rod
  - ii. New Instructors notes in PowerPoint – Winter Meeting
  - iii. Note 4 of the AASHTO – Desna
- h. T 355 In-place Density of Asphalt
  - i. AASHTO
    - 1. New date
    - 2. Active voice
    - 3. Probe to source rod
- i. Exams
  - i. Exam 3 q 4 – Dan
- 2. Revisions to Concrete Training Materials
  - a. TM 2, Sampling Concrete
    - i. AASHTO no revisions to R 60
  - b. T 309, Temperature (7/1)
    - i. AASHTO
      - 1. New date
      - 2. Redefined thermometer
      - 3. Removed reference thermometer
      - 4. Removed calibration statement
    - ii. Revise container to active voice
    - iii. Temperature range clarification (AASHTO removed this range) – Winter Meeting
- c. T 119, Slump
  - i. AASHTO – reviewed but not updated 2022
  - ii. remove redundant 'by depth' – Dan
  - iii. Reorder Slump measuring Steps – Dan
  - iv. Note 1, perform instead of make – Dan
- d. T 121, Density
  - i. AASHTO no revisions
- e. T 152, Air Content
  - i. AASHTO no revisions
  - ii. Do not tip air meter – Winter Meeting
  - iii. Combined Performance exam (2/23 & 7/1) – Misty
  - iv. Diagram of air meter
- f. R 100, Test Specimens (7/1)

- i. AASHTO
      - 1. New date
      - 2. Added thermometer specification in curing
    - ii. Add ambient temperature in final Curing – Dan
    - iii. AASHTO references T 309 in Apparatus not max/min
    - iv. Nom. Max. aggregate size for 4 in. beams should be 1 in. – Dan
    - v. Remove ‘for use with low slump concrete’ from vibrator in apparatus – Dan
  - g. Exams
    - i. 1 q 8 Temperature range
- 3. Revisions to Aggregate Training Materials
  - a. R 90, Sampling Aggregate Products
    - i. AASHTO – reviewed but not updated 2022
    - ii. Performance Exam (drafted)
      - 1. Remove Step 8 – Kevin
      - 2. Step 27 revision – Kevin
    - iii. Performance Exam Oral (drafted)
      - 1. Add missing elements to Step 6 - Kevin
      - 2. Step 8 add ‘stockpile tube’ – Kevin
      - 3. Revise Step 9.a. – Kevin
    - iv. Review Questions (drafted)
      - 1. Q 1 remove backhoe reference – Kevin
  - b. R 76, Reduction
    - i. AASHTO no revisions
    - ii. Tarp – Desna
  - c. T 255, Moisture Content of Aggregate (7/1)
    - i. AASHTO
      - 1. New date
      - 2. Detailed ovens description – add temperature?
    - ii. Microwave wattage not in AASHTO but does state ventilated – Dan
    - iii. Caution note: add crack or explode – Dan
    - iv. Do we want to include the alcohol? – Dan
  - d. T 11, Washing (7/1)
    - i. AASHTO revisions
      - 1. New revision date
      - 2. Draft oven in Apparatus revised including thermometer reference
  - e. T 27, Sieve Analysis (7/1)
    - i. AASHTO revisions
      - 1. New revision date
      - 2. Draft oven in Apparatus revised including thermometer reference
      - 3. 8.5 ‘placed on the sieves’
    - ii. AASHTO specifically states temperature for the oven – Dan
    - iii. Step 1 in A and B and Step 18 in C should include temperature – Dan
  - f. T 335, Fractured Particles
    - i. AASHTO no revisions
    - ii. Add ‘determine specification criteria’ to Performance Exam – Misty
  - g. T 176, Sand Equivalent (7/1)
    - i. AASHTO revisions
      - 1. New revision date
      - 2. Draft oven in Apparatus revised including thermometer reference
      - 3. Temperature control section with added thermometer info
      - 4. Revisions to apparatus dimensions

- 5. Sample size revision (already in FOP)
    - ii. Manual shaker instead of Manually-operated shaker in Apparatus
    - iii. PR Step 22 – include other shaker methods – Misty
    - iv. Revisions in Apparatus – Dan
    - v. Should note 3 be a note – Dan
- 4. Revisions to Asphalt I and II Training Materials
  - a. R 97, Sampling Asphalt Mixtures
    - i. AASHTO no revisions
  - b. R 47, Reducing Asphalt Mixtures
    - i. AASHTO no revisions
  - c. T 329, Moisture Content (7/1)
    - i. AASHTO
      - 1. New date
      - 2. Revised thermometers in apparatus
    - ii. Add English equivalent to scale capacity – Dan
    - iii. Is Note 1 a note? – Dan
    - iv. Add note 2 from AASHTO? – Dan
    - v. AASHTO 6.7 states approximately the same temperature – Dan
  - d. T 308, Asphalt Content (7/1)
    - i. AASHTO
      - 1. New date
      - 2. Revised thermometers in apparatus
    - ii. Pan to container
    - iii. Note 2 reworded and not a note – Dan
    - iv. Add note 2 from AASHTO? – Dan
    - v. Reword Step 3 – Dan
    - vi. Add from Section 7.9 AASHTO? – Dan
    - vii. Rework mass determination Steps in Method B – Desna
  - e. T 209,  $G_{mm}$  (6/23) (7/1)
    - i. AASHTO
      - 1. New date
      - 2. Revised thermometers in apparatus range and accuracy revised
      - 3. Add drying oven?
      - 4. Allowable variation between two tests 0.0131
      - 5. Revisions proposed by WAQTC
        - a. Vacuum pressure in Apparatus
        - b. Short-term conditioning of plant-produced samples
        - c. Add Note 8?
        - d.  $15 \pm 12$
        - e. Revisions to Standardization and Checks
    - ii. Add size of fine mesh in Apparatus Vacuum lid – Dan
  - f. T 166,  $G_{mb}$  (6/23 & 7/1)
    - i. AASHTO
      - 1. New date
      - 2. Revised thermometers and oven in apparatus range and accuracy revised
      - 3. Water bath temperature defined
      - 4. Drying temperature for Rapid test is not the same as the FOP
    - ii. AASHTO includes core condition information – Dan
    - iii. Add terminology from AASHTO? – Dan
    - iv. Add ‘completely submerged’ in Apparatus scale – Dan
    - v. Add ‘and water’ to Method B Step 5 and 11 – Dan

- vi. Step 4 add 'During the 10 min.' – Dan
- vii. Should Note 2 be a note? – Dan
- viii. Perform Steps 1 through 5 in Step 10 Pycnometer Standardization – Dan
- g. R 66, Sampling Asphalt Material
- h. T 30, Sieve Analysis
- i. T 312, Gyrotory (7/1)
  - i. New AASHTO date
  - ii. Revised thermometer range
- j. TM 13, Volumetrics
- 5. Revision to Self-Consolidating Concrete Module Training Materials
  - a. T 347/T 351, Slump Flow and VSI
  - b. T 345, J-Ring
  - c. TM 18 Penetration
    - i. ASTM C1712-20
      - 1. Cleaning the apparatus
  - d. TM 19, Column
    - i. ASTM C1610-21
      - 1. Time limit after stabilizing
      - 2. Calculation revision
- 6. Revisions to General Training Materials
- 7. PowerPoint – Rehearsing with Coach
- 8. FOP Library
  - a. T 84 – Winter Meeting
    - i. Note 2 should be a step – Lori
  - b. T 304, Uncompacted Void
    - i. Table 1 'Total' tolerance – Kevin
  - c. TM 15, Max Density
    - i. Add manual rammer – Kevin
    - ii. Add mold dimension – Garth
    - iii. Add obtaining sample for  $G_{sa}$  determination – Kevin
    - iv. Truncate specimen volume in spreadsheet – Kevin
    - v. Use  $G_{sa}$  instead of  $G_{ab}$  – Desna
    - vi. Add graduated cylinder and misc. tools – Dan
    - vii. Table 3 and Step 9, AKDOT loads at 1 min, 1 ½ min, and 2 min. – Dan
    - viii. Step 13 b – AK measure in 4 places – Dan

#### WAQTC ITEMS

- 9. YouTube Channel
  - a. Schedule for videos – Board
- 10. Administration Manual and RPIH
  - a. Are all agencies requiring a copy of radiation safety training (Annex A)? – Misty
  - b. Define limits outlined in R 25 7.4 – Randy
- 11. Operations Manual
- 12. Report from Executive Board meetings – Sean Parker
- 13. Kryterion update
- 14. 2023 Winter and Summer locations
- 15. Other items

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TOPIC	Discussion / <i>Decision</i>	ACTION REQUIRED BY:

<p>WELCOME</p>	<p>Sean Parker, ODOT and Qualification Advisory Committee (QAC) Chair, welcomed the committee members to Farmington.</p> <p>Randy Mawdsley, WSDOT, began by announcing his retirement, his last day will be Aug. 18<sup>th</sup>. Kevin Burns, WSDOT and current QAC member, has been selected to replace Randy. Randy said that he would have preferred more time with Kevin in the position before he leaves. Randy said that having online written examinations delivered by Kryterion is his crowning achievement as it has been his major goal for the last few years. Randy said that he is going to miss the QAC. The committee congratulated Randy and thanked him for his contributions to WAQTC over the years.</p> <p>Sean then asked the attendees to introduce themselves and briefly discuss their agency’s programs and the ongoing adjustments for COVID-19. Sean said that ODOT’s training program has been very busy, but they have been able to conduct it all in-person. He also indicated that ODOT may be interested in using WAQTC’s Self-Consolidating Concrete (SCC) module to supplement ACI’s certification soon.</p> <p>Dan Gettman, AKDOT, said that AKDOT’s program is pretty much back to normal. Mike San Angelo, AKDOT and Executive Board Vice Chair, is looking forward to implementing the online examinations. AKDOT has historically allowed two attempts to obtain a certification and then the technician cannot attempt again through AKDOT, but if they certify through another agency the certificate was accepted. AKDOT will begin allowing reregistration and reexaminations.</p> <p>Gilbert Arredondo, UDOT, said that UDOT has been having a difficult time filling empty technician positions. The TTQP department is now up to full strength. They are still performing qualifications in-person with COVID-19 precautions. UDOT has implemented the written ‘retest all’ option, if a technician fails one section on the written exam, they must retake the entire exam. Technicians that are recertifying have been expressing displeasure, but new certifications are fine. The program hasn’t slowed down, usually full schedules from Jan. to Oct. and winding down in Nov.</p>	
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<p>WELCOME</p>	<p>Lori Copeland, ITD, said that as far as COVID-19 issues, ITD has no more restrictions. Their program is still struggling with recent and not so recent program and personnel changes. ITD still doesn't train technicians that do not work for ITD, but 70 percent of the qualifications are for technicians that are outside ITD. ITD is looking forward to the online written exams and looking forward to implementing the written 'retest all' option.</p> <p>Sharon Taylor, NDDOT, said that they are conducting examinations in-person, a lot of technicians did not like online training. NDDOT experienced a high level of failures while conducting online training. They too are looking forward to the online written exams. NDDOT has been struggling with the implementation of a new Learning Management System (LMS) and are still partnering with Asphalt Paving Association.</p> <p>Misty Miner, MDT, said that they are using some online training, she shared her videos with the committee during the Winter Meeting, and online written exams. They have a 'field technician' certification that covers many of the WAQTC test methods. The 'field technician' certification expires in one year. The short term paired down certification allows new hires to be more useful sooner. Every new hire obtains a field technician certification and must get the full WAQTC certifications before the field technician certification expires.</p> <p>Chris Russell, CDOT, said that they have had similar issues as everyone else. They are very busy. Gilbert asked Chris if CDOT was getting people from Nevada for reciprocity. Chris says they do get a few.</p> <p>Kevin Burns, WSDOT, said that he hopes a WSDOT QAC member will be able to attend future meetings in person. WSDOT is struggling with many of the same issues as everyone else, but they are slowly getting back to the office. They have seen many of the same trends as others and they too have experienced a high level of failures. WSDOT's partnership with NWCL is working great and they are looking forward to using the online written examination option.</p>	
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REVIEW OF THE TRAINING MATERIALS AND REVISIONS FOR EACH PROCEDURE		
EMBANKMENT/ BASE AND IN-PLACE DENSITY (E&B/IPD)		
BASICS	<p><i>Basics of Compaction and Density Control</i></p> <p>Desna Bergold, D B Consulting and WAQTC Coordinator, drafted revisions to the Basics section to include backfill and structural backfill. Dan reviewed the revisions and made some suggestions before the meeting.</p> <p>The committee reviewed both Desna and Dan's revisions and considered Dan's comments. Everyone likes the new pictures that Desna included. Desna said that she used pictures from the UDOT Inspectors Guide and asked Gilbert who to contact that would be able to provide permission for WAQTC to use the pictures. Gilbert said that we could talk to Scott Nussbaum, UDOT and WAQTC Treasurer, he may be able to find out who could give permission. Desna said that she will email Scott.</p> <p>While reviewing the section, the committee felt it seemed out of order and redundant in places. Lori volunteered to work on the flow outside of the meeting and get a draft back to Desna by Aug. 15<sup>th</sup>. Desna will distribute the draft and ask the committee members to review and return comments to Lori and Desna by Aug. 22<sup>nd</sup>.</p> <p><u>Revisions to the training materials include:</u></p> <ul style="list-style-type: none"> <li>- Adding Section on Backfill and Structural Backfill</li> </ul> <p><i>Lori Copeland will draft further revisions to Basics of Compaction and Density Control by Aug. 15<sup>th</sup>. The committee members will return comments by Aug. 22<sup>nd</sup>.</i></p> <p><i>Desna Bergold will contact UDOT for permission to use pictures from their Inspector's Guide.</i></p>	LORI COPELAND QAC MEMBERS  DESNA BERGOLD
T 255/T 265	<p><i>Field Operating Procedure (FOP) for AASHTO T 255/T 265, Moisture Content of Aggregate and Soil</i></p> <p><u>Proposed revisions to the training materials:</u></p> <p>Dan Gettman, AKDOT, indicated that the wattage requirement for the microwave is not in the AASHTO method. The committee considered removing it but found</p>	

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	<p>there are low wattage microwaves still on the market and decided it was better to leave it in the FOP.</p> <p>Dan asked if the QAC wanted to change the caution note to include that the aggregate could ‘crack or explode.’ The committee agreed it was a good addition.</p> <p>He also asked if the QAC wanted to consider including the section from AASHTO on drying with alcohol. The committee decided against adding this section.</p> <p><u>The 2022 AASHTO methods revisions:</u></p> <p>The 2022 AASHTO T 255 and T 265 methods will be revised upon publication with a new revision date and will include revisions to the oven in apparatus.</p> <p>Desna asked how much of the extensive oven and thermometer information the committee wanted to include in the FOP. Chris said that the FOPs are intended to simplify the procedure for training. The committee agreed and determined that they would only include the temperature range for the oven and added that the oven should be thermostatically controlled.</p> <p><u>Other revisions</u></p> <p>The committee noticed that the sample size tables are listed from small to large sieves, most other FOPs are listed large to small sieve. The committee decided to change the tables to match other FOPs. Desna said that as she was updating the training materials, she would note which tables are listed large to small or small to large.</p> <p>The committee decided that Step 3 should be before Step 2a and 2b. The sample mass should be determined before the sample is spread in the pan or heaped in a microwave safe container.</p> <p><u>Revisions to the training materials include:</u></p> <p><b>FOP:</b></p> <ul style="list-style-type: none"> <li>- New AASHTO date</li> <li>- New date</li> <li>- Apparatus, add: <ul style="list-style-type: none"> <li>▪ Heat source, <b>thermostatically</b> controlled, <b>capable of maintaining 110 ± 5°C (230 ± 9°F).</b></li> </ul> </li> </ul>	
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	<ul style="list-style-type: none"> <li>▪ Heat source, uncontrolled, <b>for use when allowed by the agency, will not alter the material being dried, and close control of the temperature is not required.</b></li> <li>- Sample preparation add               <ul style="list-style-type: none"> <li>▪ <b>If necessary, reduce to moisture content sample size according to the FOP for AASHTO R 76.</b></li> <li>▪ <b>‘Moisture content’</b> before samples</li> <li>▪ Revise table to large to small by sieve size</li> </ul> </li> <li>- Procedure               <ul style="list-style-type: none"> <li>▪ Move ‘determine and record mass’ up</li> <li>▪ Add ‘crack or explode’ to Caution statement.</li> </ul> </li> </ul> <p><b>Performance Exam Checklist:</b></p> <ul style="list-style-type: none"> <li>- None</li> </ul> <p><b>PowerPoint:</b></p> <ul style="list-style-type: none"> <li>- Revisions to match the FOP revisions.</li> </ul> <p><i>These revisions will be included in the 2022 training materials.</i></p>	DESNA BERGOLD
T 99/T 180	<p><i>FOP for AASHTO T 99; Moisture-Density Relations of Soils Using a 2.5-kg (5.5-lb) Rammer and a 305-mm (12-in.) Drop and T 220; Moisture-Density Relations of Soils Using a 4.54-kg (10-lb) Rammer and a 457-mm (22-in.) Drop</i></p> <p><u>Proposed revisions to the training materials:</u></p> <p>During the Winter Meeting, the committee discussed the usage of variables in the FOP. In the formulas, <math>P_f</math>, representing the percent of fine particles in a sample, and <math>\rho_f</math>, representing the density of the fine particles, look the same. This has created a problem for the technicians. The committee reviewed some options and decided when the term P is used it will not be italicized, even in equations, and that when <math>\rho</math> is used it will be italicized.</p> <p>Desna drafted these revisions. Misty said she also bolds <math>\rho_f</math> in the equations and the definitions. The committee decided to adopt this also.</p>	

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	<p><u>The 2022 AASHTO methods revisions:</u></p> <p>The 2022 AASHTO T 99 and T 180 methods will be revised upon publication with a new revision date and will include revisions to the oven in apparatus.</p> <p>The committee determined that the current drying apparatus language is sufficient.</p> <p><u>Other revisions</u></p> <p>Kevin mentioned that the ‘rammer drop’ on Tables 1 and 2 do not have a tolerance but the AASHTO methods do. The tolerance will be added to the tables.</p> <p>Step 7 says to determine and record masses ‘to the nearest 1 g (0.005 lb) or better.’ This is the only place the training materials use ‘or better.’ The committee decided to remove it.</p> <p>The committee noticed that in Apparatus there is a reference to the FOP for AASHTO T 99 and T 180 for more information on rammer calibration. This should be referencing the AASHTO Test Methods. The ‘FOP for’ will be removed.</p> <p><u>Revisions to the training materials include:</u></p> <p><b>FOP:</b></p> <ul style="list-style-type: none"> <li>- New AASHTO date</li> <li>- New date</li> <li>- Apparatus <ul style="list-style-type: none"> <li>▪ Fix internal reference</li> <li>▪ Tables 1 and 2, add range in ‘Rammer Drop’</li> </ul> </li> <li>- Procedure <ul style="list-style-type: none"> <li>▪ Step 7 remove ‘or better’</li> <li>▪ Italicize all <math>\rho</math> throughout</li> <li>▪ Step 11 add ‘w’ variable</li> </ul> </li> <li>- Annex A <ul style="list-style-type: none"> <li>▪ Bold <math>\rho_f</math></li> </ul> </li> </ul> <p><b>Performance Exam Checklist:</b></p> <ul style="list-style-type: none"> <li>- None</li> </ul>	
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	<p><b>PowerPoint:</b></p> <ul style="list-style-type: none"> <li>- Revisions to match the FOP revisions.</li> </ul> <p><i>These revisions will be included in the 2022 training materials.</i></p>	DESNA BERGOLD
R 75	<p><i>FOP for AASHTO R 75; Developing a Family of Curves</i></p> <p><u>Proposed revisions to the training materials:</u></p> <p>Dan said someone found an error in the handout practice graph key. One of the points was in the wrong place. Desna drafted the correction.</p> <p><u>There are no revisions to the AASHTO method in 2022.</u></p> <p>Revisions to the training materials include:</p> <p><b>Graph handout:</b></p> <ul style="list-style-type: none"> <li>- Correction to the answer key.</li> </ul> <p><i>These revisions will be included in the 2022 training materials.</i></p>	DESNA BERGOLD
T 272	<p><i>FOP for AASHTO T 272; One-point Method for Determining Maximum Dry Density and Optimum Moisture</i></p> <p><u>Proposed revisions to the training materials:</u></p> <p>As with the FOP for AASHTO T 99/T 80, the term <math>\rho</math> will be italicized in all instances. ‘Wet density’ in calculation will also be revised to <math>\rho_w</math>.</p> <p>The variables need to be identified in the steps as in other test methods. The committee agreed with the drafted revisions.</p> <p>During the Winter Meeting, Misty proposed creating a combination Performance Exam Checklist for the FOPs for AASHTO T 99/T 180 and T 272 as they both have compaction of a specimen in the mold. Misty drafted and distributed the combined checklist.</p> <p>The committee discussed how the Performance Exams are handled in each agency. Many do combine the first portion of the two performance exams. The committee reviewed the checklist and recommended some minor adjustments.</p> <p>Misty asked if anyone else would like to use the checklist, Chris and Kevin said their agencies may want to use it in the future. Misty also asked if anyone had an issue with her using</p>	

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	<p>the revised checklist, no one does. The revised checklist was distributed to the committee but will not be included in the 2022 Training Materials.</p> <p>Before the meeting, Lori told Desna that there is an extra decimal place in a ‘Calculations’ example (0303344 ft<sup>3</sup>). The extra 4 will be removed.</p> <p>Dan had also informed Desna that there is a redundancy in Step 10 ‘one of the cut faces’ is used in the middle of the sentence and at the end. This will be removed. Desna verified that this same redundancy is not in the FOP for AASHTO T 99/T 180.</p> <p><u>There are no revisions to the AASHTO method in 2022.</u></p> <p><u>Other revisions:</u></p> <p>Step 7 has ‘or better’ in mass determination as in the FOP for AASHTO T 99/T 180. This will be removed.</p> <p>Revisions to the training materials include:</p> <p><b>FOP (editorial):</b></p> <ul style="list-style-type: none"> <li>- Procedure           <ul style="list-style-type: none"> <li>▪ Italicize all <math>\rho</math> throughout</li> <li>▪ Step 7 remove ‘or better’</li> <li>▪ Step 9 add variable ‘<math>\rho_w</math>’</li> <li>▪ Step 10 remove redundant ‘one of the cut faces’</li> <li>▪ Step 11 add ‘w’ variable</li> </ul> </li> <li>- Calculations change ‘wet density’ to ‘<math>\rho_w</math>’</li> </ul> <p><b>Performance Exam Checklists:</b></p> <ul style="list-style-type: none"> <li>- None</li> </ul> <p><b>PowerPoint:</b></p> <ul style="list-style-type: none"> <li>- Revisions to match the FOP revisions.</li> </ul> <p><i>These revisions will be included in the 2022 training materials.</i></p>	<p>DESNA BERGOLD</p>
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TOPIC	Discussion / <i>Decision</i>	ACTION REQUIRED BY:

T 85	<p><i>FOP for AASHTO T 85; Specific Gravity and Absorption of Coarse Aggregate</i></p> <p><u>Proposed revisions to the training materials:</u></p> <p>Dan noted that the sample container description in the AASHTO method 6.2 says:</p> <p style="padding-left: 40px;">The container shall be constructed so as to prevent trapping air when the container is submerged.</p> <p>The committee decided that specifying a wire basket is sufficient.</p> <p><u>The 2022 AASHTO methods revisions</u></p> <p>The 2022 AASHTO T 85 method will be revised upon publication with a new revision date and will include revisions to the oven in apparatus. These revisions do not impact the training materials.</p> <p><u>Revisions to the training materials include:</u></p> <p><b>FOP:</b></p> <ul style="list-style-type: none"> <li>- New AASHTO date</li> <li>- New date</li> </ul> <p><b>Performance Exam Checklist:</b></p> <ul style="list-style-type: none"> <li>- None</li> </ul> <p><b>PowerPoint:</b></p> <ul style="list-style-type: none"> <li>- None</li> </ul> <p><i>These revisions will be included in the 2022 training materials.</i></p>	DESNA BERGOLD
T 310	<p><i>FOP for AASHTO T 310; In-place Density and Moisture Content of Soil and Soil-aggregate by Nuclear Methods</i></p> <p><u>Proposed revisions to the training materials:</u></p> <p>During the Winter Meeting, the committee determined that the FOP should better address trench wall effect and proposed adding the following:</p> <ul style="list-style-type: none"> <li>- Step 1.d, ‘Correct for trench wall effect according to manufacturer’s correction procedures if the test site is closer than 600 mm (24 in.) to vertical projection. See Note 2.’</li> </ul>	

TOPIC	Discussion / <i>Decision</i>	ACTION REQUIRED BY:
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<p>T 310</p>	<ul style="list-style-type: none"> <li>- <b>Note 2:</b> To perform moisture and density tests in a trench or against a large solid object, it is necessary to perform a trench moisture correction. Moisture present in the trench walls may be read by the moisture detector in the gauge.</li> </ul> <p>The committee members decided to include this revision in the 2022 Training Materials with Note 2 also in the Instructor’s Note on Slide 15.</p> <p>Desna asked if the committee wanted to address Note 4 from the AASHTO method.</p> <p style="padding-left: 40px;">Note 1—As a safety precaution, do not extend a rod containing radioactive sources out of its shielded position prior to placing on the test site. Always align the gauge so as to allow placing the rod directly into the test hole from the shielded position.</p> <p>The committee opted not to address this note.</p> <p>Desna also drafted a brief statement on backfill in the Significance section of the Student FOP. The committee approved this revision.</p> <p>The committee asked Desna to better format the FOP and PowerPoint pictures. They decided that the PowerPoint should have the picture on the slide with the Procedure step it is illustrating and the picture next to the step in the FOP.</p> <p>Sean said he will get a picture of seating the gauge against the side of the hole. Misty provided a picture of the gauge on the standardization block from her video. Desna was also asked to use the representative picture from the PowerPoint in the FOP.</p> <p>As with the FOP for AASHTO T 99/T 80, the term <math>\rho</math> will be italicized in all instances.</p> <p><u>The 2022 AASHTO methods revisions</u></p> <p>The 2022 AASHTO T 310 methods will be revised upon publication with a new revision date and will include revisions to replace the term ‘probe’ with ‘source rod.’ This is already changed in the FOP.</p> <p><u>Other revisions</u></p> <p>Kevin pointed out the FOP still references WSDOT’s TM 606, they now use WAQTC TM 5.</p>	
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TOPIC	Discussion / <i>Decision</i>	ACTION REQUIRED BY:
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T 310	<p><u>Revisions to the training materials include:</u></p> <p><b>FOP (Student)</b></p> <ul style="list-style-type: none"> <li>- Add ‘backfill’ and ‘Performance of this test method in trenches and near structures requires a trench moisture offset correction.’</li> </ul> <p><b>FOP (both)</b></p> <ul style="list-style-type: none"> <li>- New AASHTO Date</li> <li>- New Date</li> <li>- Procedure             <ul style="list-style-type: none"> <li>▪ Add Step 1d, ‘Correct for trench wall effect according to manufacturer’s correction procedures if the test site is closer than 600 mm (24 in.) to vertical projection. See Note 2.’</li> <li>▪ Add Note 2, ‘To perform moisture and density tests in a trench or against a large solid object, it is necessary to perform a trench offset correction to adjust the gauge, or it may read a falsely high moisture content. Moisture present in the walls can thermalize neutrons which return to the gauge and are read as moisture by the detector in the gauge.’</li> </ul> </li> <li>- Percent compaction – replace ‘WSDOT’s TM 606’ with ‘WAQTC TM 5’</li> <li>- Calculations - Italicize all <math>\rho</math> throughout</li> </ul> <p><b>Review questions</b></p> <ul style="list-style-type: none"> <li>- New Date</li> <li>- Add, ‘When is a trench offset correction required?’</li> </ul> <p><b>Performance Exam Checklist:</b></p> <ul style="list-style-type: none"> <li>- None</li> </ul> <p><b>PowerPoint:</b></p> <ul style="list-style-type: none"> <li>- Revisions to match the FOP revisions.</li> <li>- Pictures on the slide with the Procedure Step it is illustrating</li> <li>- New pictures</li> </ul>	
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TOPIC	Discussion / Decision	ACTION REQUIRED BY:
	<p><i>Sean Parker will provide a picture of seating the gauge against the side of the hole.</i></p> <p><i>These revisions will be included in the 2022 training materials.</i></p>	<p>SEAN PARKER DESNA BERGOLD</p>
T 355	<p><i>FOP for AASHTO T 355, In-place Density of Asphalt Mixtures by Nuclear Method</i></p> <p><u>No revisions to the training materials were proposed before the meeting.</u></p> <p><u>The 2022 AASHTO methods revisions</u></p> <p>The 2022 AASHTO T 355 methods will be revised upon publication with a new revision date and will include revisions to replace the term ‘probe’ with ‘source rod.’</p> <p><u>Other revisions:</u></p> <p>Sean asked that the figures in the FOP for ‘Footprint of the gauge test site, Arrow indicates direction,’ be flipped over so that the arrow points upward. This will be an untracked change in the training materials.</p> <p><u>Revisions to the training materials include:</u></p> <p><b>FOP:</b></p> <ul style="list-style-type: none"> <li>- New AASHTO date</li> <li>- New date</li> <li>- Flip figures so direction of roller pass is up</li> </ul> <p><b>Performance Exam Checklist:</b></p> <ul style="list-style-type: none"> <li>- None</li> </ul> <p><b>PowerPoint:</b></p> <ul style="list-style-type: none"> <li>- Revisions to match the FOP revisions.</li> </ul> <p><i>These revisions will be included in the 2022 training materials.</i></p>	<p>DESNA BERGOLD</p>
EXAMS	<p>Dan wanted the committee to review written Exam 3, Q 4. The committee decided to replace the question.</p> <p>As with the FOPs, the term <math>\rho</math> will be italicized in all instances and will <math>\rho_f</math> be bolded. Other revisions are editorial.</p>	

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TOPIC	Discussion / <i>Decision</i>	ACTION REQUIRED BY:
	<i>These revisions will be included in the 2022 training materials.</i>	DESNA BERGOLD
CONCRETE (CTT)		
BASICS	<p><i>Basics of Concrete</i></p> <p>Misty pointed out that the video on the PowerPoint Slide 19 does not include tapping the sides of the beam on the first layer. Desna said that she could trim the video to show consolidation of just the second layer.</p> <p><i>Desna will trim the video on PowerPoint Side 19.</i></p>	DESNA BERGOLD
TM 2	<p><i>FOP for WAQTC TM 2; Sampling of Freshly Mixed Concrete</i></p> <p><u>No revisions to the training materials were proposed before the meeting.</u></p> <p><u>There are no revisions to the AASHTO R 60 in 2022.</u></p> <p><i>There are no revisions for this method for the 2022 training materials.</i></p>	
T 309	<p><i>FOP for AASHTO T 309; Temperature of Freshly Mixed Portland Cement Concrete</i></p> <p><u>Proposed revisions to the training materials:</u></p> <p>During the Winter Meeting, Lori said that one of ITD's technicians had a problem with AASHTO T 309 Section 6.1. 15°C is not equivalent to 27°F.</p> <p style="padding-left: 40px;">‘6.1 – Perform standardization by comparing readings on the thermometer with another calibrated thermometer at two temperatures at least 15°C (27°F) apart.’</p> <p>The committee reviewed the section and found that even though it appears to be presented as an equivalency, it is referring to standardizing the thermometer at two disparate temperatures. 15°C is equivalent to 60°F and 30°C is equivalent to 87°F. The FOP for AASHTO T 309 states, ‘at two temperatures at least 15°C or 27°F apart,’ and therefore avoids this confusion.</p> <p>Desna drafted revisions to the container description in apparatus to active voice.</p>	

TOPIC	Discussion / <i>Decision</i>	ACTION REQUIRED BY:
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T 309	<p><u>The 2022 AASHTO methods revisions</u></p> <p>The 2022 AASHTO T 309 method will be revised upon publication with a new revision date and will include revisions to:</p> <ul style="list-style-type: none"> <li>- Remove reference thermometer</li> <li>- Changed calibration statement to standardization</li> <li>- Add thermometer information</li> </ul> <p><u>Other revisions</u></p> <p>The committee reviewed the drafted revisions and decided to add Note 2 from AASHTO (Note 1 in the FOP) which discusses suitable types of thermometers. They also decided to include this note on Slide 7 of the PowerPoint.</p> <p><u>Discussion item</u></p> <p>The committee is concerned with the new language for thermometers in multiple AASHTO methods. The methods now state the thermometer must be ‘accurate to’ a specified temperature range. The committee has thought that ‘accuracy’ is something that is verified according to AASHTO R 18 not in a test method. Desna wrote an email to Sonya Puterbaugh, AASHTO re:source, asking how re:source will be verifying the accuracy of the thermometers when they are accrediting a lab in the test method. Sonya indicated that re:source is working on it.</p> <p><u>Revisions to the training materials include:</u></p> <p><b>FOP</b></p> <ul style="list-style-type: none"> <li>- New date</li> <li>- New AASHTO date</li> <li>- Apparatus <ul style="list-style-type: none"> <li>▪ Revise container to active voice</li> <li>▪ Change ‘Temperature Measuring Device and the definition to, ‘Thermometer: Capable of measuring the temperature of the concrete throughout the temperature range likely to be encountered, at least –18 to 50°C (0 to 120°F), and readable to ±0.5°C (±1°F) or smaller.’</li> <li>▪ Remove reference measuring device</li> </ul> </li> </ul>	
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TOPIC	Discussion / <i>Decision</i>	ACTION REQUIRED BY:
T 309	<ul style="list-style-type: none"> <li>▪ Add Note 1 on suitable thermometer types from 2022 AASHTO</li> <li>- Change ‘Calibration’ to ‘Standardization.’</li> </ul> <p><b>Performance Exam Checklist:</b></p> <ul style="list-style-type: none"> <li>- None</li> </ul> <p><b>PowerPoint:</b></p> <ul style="list-style-type: none"> <li>- Revisions to match the FOP revisions.</li> <li>- Add Note 1 to the Notes of Slide 1</li> </ul> <p><i>These revisions will be included in the 2022 training materials.</i></p>	DESNA BERGOLD
T 119	<p><i>FOP for AASHTO T 119; Slump of Hydraulic Concrete</i></p> <p><u>Proposed revisions to the training materials:</u></p> <p>Dan closely reviewed the test methods before the meeting and found some redundancy and errors. In Steps 4 and 6, redundant 'by depth' should be removed. In Note 1, it should read, ‘perform a new test’ instead of ‘make a new test.’</p> <p>Dan also recommended making ‘Immediately measure the slump’ Step 13 and the former Steps 13 through 15 into sub steps. These revisions were approved.</p> <p><u>There are no revisions to the AASHTO method in 2022.</u></p> <p><u>Revisions to the training materials include:</u></p> <p><b>FOP (editorial)</b></p> <ul style="list-style-type: none"> <li>- Remove redundancies in Steps 4 and 6</li> <li>- Reformat slump measuring Steps</li> </ul> <p><b>Performance Exam Checklist:</b></p> <ul style="list-style-type: none"> <li>- None</li> </ul> <p><b>PowerPoint:</b></p> <ul style="list-style-type: none"> <li>- Revisions to match the FOP revisions.</li> <li>- Add definition of a ‘frustum’ to notes on Slide 8</li> <li>- Add ‘approximately’ to Step 5 on Slide 13</li> </ul> <p><i>These revisions will be included in the 2022 training materials.</i></p>	DESNA BERGOLD

TOPIC	Discussion / <i>Decision</i>	ACTION REQUIRED BY:
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T 121	<p><i>FOP for AASHTO T 122; Density (Unit Weight), Yield, and Air Content (Gravimetric) of Concrete</i></p> <p><u>No revisions to the training materials were proposed before the meeting.</u></p> <p><u>There are no revisions to the AASHTO method in 2022.</u></p> <p><u>Discussion item</u></p> <p>Misty asked Desna to include revising the AASHTO method on the 2023 Winter Meeting Agenda. The AASHTO does not include determining the mass of the measure in the Procedure. She would also like to work with Sean on including cementitious material in the calculations.</p> <p><i>There are no revisions for this method for the 2022 training materials.</i></p> <p><i>Revisions to AASHTO T 121 will be included on the 2023 Winter Meeting Agenda.</i></p>	DESNA BERGOLD
T 152	<p><i>FOP for AASHTO T 152; Air Content of Freshly Mixed Concrete by the Pressure Method</i></p> <p><u>Proposed revisions to the training materials:</u></p> <p>During the Winter Meeting Lori recommended that the FOP include a picture labeling the ‘main air valve,’ ‘bleeder valve,’ and ‘petcocks.’ At that time, they reviewed AASHTO T 152 and saw that it included a great diagram of the Type B Meter. The committee agreed that if AASHTO would give WAQTC permission to use it, it would be better than trying to recreate it. Sean discussed it with the Executive Board during the Spring Meeting. Oak Metcalfe, MDT, asked for and received permission to use the figure.</p> <p>During the Winter Meeting, Lori also said that the Manufacturer’s Operating instructions state not to tilt the meter while filling with water through the petcocks.</p> <p>Desna drafted these revisions, and they are approved.</p> <p>During the Winter Meeting, Misty proposed creating a combination Performance Exam Checklist for the FOPs for AASHTO T 121 and T 152 as they both have filling the measure in common. The revised checklist was distributed to the committee but will not be included in the 2022 Training materials.</p>	

TOPIC	Discussion / <i>Decision</i>	ACTION REQUIRED BY:
T 152	<p><u>There are no revisions to the AASHTO method in 2022.</u></p> <p><u>Revisions to the training materials include:</u></p> <p><b>FOP:</b></p> <ul style="list-style-type: none"> <li>- Add Type B Meter figure from the AASHTO method (with permission)</li> <li>- Remove Step 6 on inclining the air meter while filling with water</li> <li>- Add, ‘Jar the meter gently until all air is expelled from this same petcock,’ to Step 5</li> <li>- Add new Step 6, ‘Verify that water is present in both petcocks.’</li> </ul> <p><b>Annex A</b></p> <ul style="list-style-type: none"> <li>- Step 5 remove rocking the meter</li> </ul> <p><b>Performance Exam Checklist:</b></p> <ul style="list-style-type: none"> <li>- New date</li> <li>- Change rocking the air meter while water is injected to jarring.</li> </ul> <p><b>PowerPoint:</b></p> <ul style="list-style-type: none"> <li>- Renumber slide numbers in student</li> <li>- Revisions to match the FOP revisions.</li> </ul> <p><i>These revisions will be included in the 2022 training materials.</i></p>	DESNA BERGOLD
R 100	<p><i>FOP for AASHTO R 100; Making and Curing Concrete Test Specimens in the Field</i></p> <p><u>Proposed revisions to the training materials:</u></p> <p>Dan noticed that the AASHTO Method specifies an ambient temperature in final Curing in 10.1.3.1, the FOP does not include this requirement.</p> <p>Desna pointed out that AASHTO references T 309 in Apparatus.</p> <p>Dan said that the nominal maximum aggregate size for 4-inch beam specimens is incorrect in the FOP, it should be 1 in.</p>	

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TOPIC	Discussion / <i>Decision</i>	ACTION REQUIRED BY:
	<p>Dan also recommended that ‘for use with low slump concrete’ should be removed from vibrator in apparatus.</p> <p>These revisions were approved by the committee.</p> <p><u>The 2022 AASHTO methods revisions</u></p> <p>The 2022 AASHTO R 100 practice will be revised upon publication with a new revision date and will add a thermometer specification in curing.</p> <p><u>Revisions to the training materials include:</u></p> <p><b>FOP</b></p> <ul style="list-style-type: none"> <li>- New AASHTO date</li> <li>- New date</li> <li>- Apparatus <ul style="list-style-type: none"> <li>▪ Nom. Max. aggregate size for 4 in. beams will be changed to 1 in.</li> <li>▪ Remove ‘for use with low slump concrete’ from vibrator in apparatus</li> <li>▪ Add to Thermometer, ‘meeting the requirements for FOP for AASHTO T 309’</li> </ul> </li> <li>- Final Curing add ambient temperature range to third bullet</li> </ul> <p><b>Performance Exam Checklist:</b></p> <ul style="list-style-type: none"> <li>- None</li> </ul> <p><b>PowerPoint:</b></p> <ul style="list-style-type: none"> <li>- Agency</li> </ul> <p><i>These revisions will be included in the 2022 training materials.</i></p>	DESNA BERGOLD
EXAMS	<i>There are no revisions for the 2022 training materials.</i>	
AGGREGATE (AGTT)		
R 90	<p><i>FOP for AASHTO R 90; Sampling Aggregate Products</i></p> <p><u>Proposed revisions to the training materials:</u></p> <p>Kevin proposed revisions to the Performance Exam Checklists. In the oral Performance Exam Checklist, he said that Step 6, sampling from a stockpile, was missing a few</p>	

TOPIC	Discussion / <i>Decision</i>	ACTION REQUIRED BY:
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R 90	<p>elements, Step 8, sampling from a stockpile using a sampling tube, Step 8b should include the tube. He also wanted Step 9a concerning mixing the increments to be revised.</p> <p>The committee approved revisions to Steps 6 and 8 but decided that ‘Combine and mix to form a single sample,’ should be included in every sampling method and location and Step 9 deleted.</p> <p>Kevin proposed revisions to the other Performance Exam Checklist, also concerning combining and mixing the sample increments. The committee decided to add, ‘Increments combined and mixed to form a single sample?’ to every sampling method and location and Step 27 deleted.</p> <p>Kevin pointed out the Review Question 1 asks, ‘How can power equipment, such as loaders and backhoes, be used to collect aggregate samples?’ The FOP only mentions loaders. The question will be revised to ‘How can loaders be used to collect aggregate samples?’</p> <p><u>There are no revisions to the AASHTO method in 2022.</u></p> <p><u>Other revisions</u></p> <p>The committee decided to include ‘and mix thoroughly’ in each step in the FOP that refers to combining the sample increments.</p> <p>Sean decided this warrants a new revision date.</p> <p><u>Revisions to the training materials include:</u></p> <p><b>FOP:</b></p> <ul style="list-style-type: none"> <li>- New date</li> <li>- Add ‘and mix thoroughly’ after combining increments in all methods and locations</li> </ul> <p><b>Review Questions:</b></p> <ul style="list-style-type: none"> <li>- New date</li> <li>- Remove ‘power equipment such as backhoe,’ the FOP discusses use of a loader, not other equipment</li> </ul> <p><b>Performance Exam Checklist (both):</b></p> <ul style="list-style-type: none"> <li>- New date</li> </ul>	
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TOPIC	Discussion / <i>Decision</i>	ACTION REQUIRED BY:
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R 90	<ul style="list-style-type: none"> <li>- Add 'Increments combined and mixed to form a single sample.' In all Methods and locations.</li> <li>- Remove 'General' statement</li> </ul> <p><b>PowerPoint:</b></p> <p>Revisions to match FOP</p> <p><i>These revisions will be included in the 2022 training materials.</i></p>	DESNA BERGOLD
R 76	<p><i>FOP for AASHTO R 76; Reducing Samples of Aggregate to Testing Size</i></p> <p><u>Proposed revisions to the training materials:</u></p> <p>During the Winter Meeting, the committee proposed using the term 'tarp' in apparatus and defining it as a sheet or canvas so that a single term could be used. Desna drafted this revision in the FOP. The committee approved the editorial revision.</p> <p><u>There are no revisions to the AASHTO method in 2022.</u></p> <p><u>Other revisions</u></p> <p>The committee reviewed the drafted revisions and determined that the Performance Exam Checklist needed further revising. Step 6 was revised to include using a shovel or trowel to quarter the flattened pie or using a stick or pipe. This revision allowed for the removal of the italicized statement at the end addressing use of a stick or pipe.</p> <p><u>Revisions to the training materials include:</u></p> <p><b>FOP</b></p> <ul style="list-style-type: none"> <li>- Define 'tarp' and use the term instead of 'sheet' or 'canvas' (editorial)</li> </ul> <p><b>Performance Exam Checklist</b></p> <ul style="list-style-type: none"> <li>- New date</li> <li>- Use 'tarp'</li> <li>- Revise Method B Quartering Step 6 to better address use of the 'tarp.'</li> <li>- Remove italicized statement and include in Method B Quartering Step 6</li> </ul>	

TOPIC	Discussion / <i>Decision</i>	ACTION REQUIRED BY:
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	<p><b>PowerPoint</b></p> <ul style="list-style-type: none"> <li>- Revisions to match FOP</li> </ul> <p><i>These revisions will be included in the 2022 training materials.</i></p>	<p>DESNA BERGOLD</p>
<p>T 255</p>	<p><i>FOP for AASHTO T 255, Total Evaporable Moisture Content of Aggregate by Drying</i></p> <p><u>Proposed revisions to the training materials:</u></p> <p>The revision discussion from the FOP for AASHTO T 255/T 265 relates to this FOP. All the revisions approved for that FOP will be mirrored in this FOP.</p> <p><u>The 2022 AASHTO method revisions</u></p> <p>The 2022 AASHTO T 255 method will be revised upon publication with a new revision date and will include revisions to the oven in apparatus.</p> <p><u>Revisions to the training materials include:</u></p> <p><b>FOP:</b></p> <ul style="list-style-type: none"> <li>- New date</li> <li>- New AASHTO date</li> <li>- Apparatus add               <ul style="list-style-type: none"> <li>▪ Heat source: <b>thermostatically</b> controlled, <b>capable of maintaining 110 ± 5°C (230 ± 9°F).</b></li> <li>▪ Heat source, uncontrolled, <b>for use when allowed by the agency, will not alter the material being dried, and close control of the temperature is not required.</b></li> </ul> </li> <li>- Sample Preparation add               <ul style="list-style-type: none"> <li>▪ <b>If necessary, reduce to moisture content sample size according to the FOP for AASHTO R 76.</b></li> </ul> </li> <li>- Procedure add               <ul style="list-style-type: none"> <li>▪ In ‘Caution’ statement add, <b>‘and crack and explode.’</b></li> </ul> </li> </ul> <p><b>Performance Exam Checklist:</b></p> <ul style="list-style-type: none"> <li>- None</li> </ul>	

TOPIC	Discussion / <i>Decision</i>	ACTION REQUIRED BY:
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	<p><b>PowerPoint:</b></p> <ul style="list-style-type: none"> <li>- Revisions to match the FOP revisions.</li> </ul> <p><i>These revisions will be included in the 2022 training materials.</i></p>	<p>DESNA BERGOLD</p>
<p>T 27/T 11</p>	<p><i>FOP for AASHTO T 27/T 11; Sieve Analysis of Fine and Coarse Aggregates and Materials Finer Than 75-<math>\mu</math>m (No. 200) Sieve in Mineral Aggregates by Washing</i></p> <p><u>Proposed revisions to the training materials:</u></p> <p>Dan said that AASHTO T 11 specifically states temperature for the oven to dry the sample. The FOP should be revised to match. Also, in the AASHTO, the steps to dry the sample before and after wash include the temperature range, 110° C (230° F).</p> <p>The committee felt that this should just reference AASHTO T 255 and allow a higher temperature if the material will not degrade. Referencing AASHTO T 255 would also capture the other requirements to reach constant mass. Revisions to AASHTO T 11 will be on the 2023 Winter Meeting Agenda.</p> <p>Sean said he would talk to the Board about this procedure and the possible revisions.</p> <p><u>The 2022 AASHTO methods revisions</u></p> <p>The 2022 AASHTO T 11 and T 27 methods will be revised upon publication with a new revision date and will include revisions to the oven in apparatus and thermometer.</p> <p><u>Other revisions</u></p> <p>The committee reviewed the ‘check sum’ language, which is the comparison of the mass of material put on the sieves and the mass of material that is recovered. AASHTO T 27 states that the difference of the two masses cannot be ‘more than 0.3 percent.’ The FOP states that the two masses must be ‘within 0.3 percent’ in the Procedure and ‘less than 0.3 percent’ in the Calculations. The committee drafted revisions to correct this.</p> <p><u>Revisions to the training materials include</u></p> <p><b>FOP:</b></p> <ul style="list-style-type: none"> <li>- New date</li> <li>- New AASHTO Date</li> <li>- Procedure Method A</li> </ul>	

TOPIC	Discussion / <i>Decision</i>	ACTION REQUIRED BY:
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<p>T 27/T 11</p>	<ul style="list-style-type: none"> <li>▪ Steps 1 and 10 add, ‘Dry the sample to constant mass <b>at 110° C (230° F)</b>’</li> <li>▪ Step 14 and Calculations, rewrite ‘check sum’ to agree with AASHTO, ‘is <b>not more than 0.3</b> percent’</li> </ul> <p>- Procedure Method B</p> <ul style="list-style-type: none"> <li>▪ Step 1 and Step 10 add, ‘Dry the sample to constant mass <b>at 110° C (230° F)</b>’</li> <li>▪ Steps 15, 20, and Calculations, rewrite ‘check sum’ to agree with AASHTO, ‘is <b>not more than 0.3</b> percent’</li> </ul> <p>- Procedure Method C</p> <ul style="list-style-type: none"> <li>▪ Step 1 and Step 18 add, ‘Dry the sample to constant mass <b>at 110° C (230° F)</b>’</li> <li>▪ Steps 7, 22, and Calculations, rewrite ‘check sum’ to agree with AASHTO, ‘is <b>not more than 0.3</b> percent’</li> </ul> <p><b>Performance Exam Checklists</b></p> <ul style="list-style-type: none"> <li>- ‘is <b>not more than 0.3</b> percent’</li> </ul> <p><b>PowerPoint:</b></p> <ul style="list-style-type: none"> <li>- Revisions to match the FOP revisions.</li> </ul> <p><i>These revisions will be included in the 2022 training materials.</i></p>	<p>DESNA BERGOLD</p>
<p>T 335</p>	<p><i>FOP for AASHTO T 335, Determining the Percentage of Fracture in Coarse Aggregate</i></p> <p><u>Proposed revisions to the training materials:</u></p> <p>Misty proposed adding a step to the Performance Exam Checklist, ‘determine specification criteria,’ to require the technician to find out if the criteria they use to separate the aggregate is one fracture face or two.</p> <p>Sean thought this was confusing because specification criteria isn’t mentioned in the FOP. The committee reviewed the Terminology section of the FOP and found that the section defines ‘fractured face’ and ‘fractured particle,’ but the term used throughout the Procedure is ‘fractured criteria.’ The</p>	

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TOPIC	Discussion / <i>Decision</i>	ACTION REQUIRED BY:

T 335	<p>committee decided to add this term and its definition in the Terminology section.</p> <p>They then added a new Step 4 in the Performance Exam Checklist, ‘Each particle examined to determine if the particle meets the fracture criteria?’</p> <p><u>There are no revisions to the AASHTO method in 2022.</u></p> <p><u>Revisions to the training materials include:</u></p> <p><b>FOP:</b></p> <ul style="list-style-type: none"> <li>- New date</li> <li>- Add, ‘<b>Fractured criteria: Determined by the agency to define a fractured particle,</b>’ in Terminology.</li> </ul> <p><b>Performance Exam Checklist</b></p> <ul style="list-style-type: none"> <li>- New date</li> <li>- Add a new Step 4, ‘Each particle examined to determine if the particle meets the fractured criteria?’</li> </ul> <p><b>PowerPoint</b></p> <ul style="list-style-type: none"> <li>- Revisions to match the FOP revisions.</li> </ul> <p><i>These revisions will be included in the 2022 training materials.</i></p>	DESNA BERGOLD
T 176	<p><i>FOP for AASHTO T 176, Plastic Fines in Graded Aggregates and Soils by Use of the Sand Equivalent Test</i></p> <p><u>Proposed revisions to the training materials:</u></p> <p>Desna suggested that ‘Manually-operated shaker’ in Apparatus be changed to ‘Manual Shaker.’ Misty proposed adding the times for other shaker methods to Step 22 of the Performance exam Checklist along with the mechanical shaker method.</p> <p>These revisions were approved.</p> <p>Dan said that there was more detail in the Apparatus section in the AASHTO Method than the FOP. The committee said that often this is intentional as the FOP is used for training. Dan wanted to know if the committee wanted to add dimensions for the measuring can and the funnel. The committee decided against adding them.</p>	

TOPIC	Discussion / <i>Decision</i>	ACTION REQUIRED BY:
T 176	<p>Dan also pointed out that the AASHTO includes a sieve, this will be added.</p> <p>Dan then asked if Note 3 should be a note. This was discussed during the Winter Meeting, and it was decided that as the note is intended to reference the AASHTO method and should remain a note.</p> <p><u>The 2022 AASHTO revisions include:</u></p> <p>The 2022 AASHTO T 176 method will be revised upon publication with a new revision date and will include revisions to the oven in apparatus, thermometer, equipment dimensions, and sample mass. The revision for sample mass is already in the FOP.</p> <p><u>Revisions to the training materials include:</u></p> <p><b>FOP</b></p> <ul style="list-style-type: none"> <li>- New date</li> <li>- New AASHTO date</li> <li>- Apparatus</li> <li>- Title ‘Manual Shaker’</li> <li>- Add, ‘<b>Sieve: 4.75-mm (No. 4) sieve meeting the requirements of the FOP for AASHTO T 27/T 11.</b>’</li> </ul> <p><b>Performance exam Checklist</b></p> <ul style="list-style-type: none"> <li>- New date</li> <li>- Add steps for other shaker methods</li> </ul> <p><b>PowerPoint</b></p> <ul style="list-style-type: none"> <li>- Revisions to match the FOP revisions.</li> </ul> <p><i>These revisions will be included in the 2022 training materials.</i></p>	DESNA BERGOLD
EXAMS	<p>Editorial revisions include the use of the term ‘tarp.’ Replacing a specification question with a ‘check sum’ question.</p> <p><i>These revisions will be included in the 2022 training materials.</i></p>	DESNA BERGOLD

TOPIC	Discussion / <i>Decision</i>	ACTION REQUIRED BY:
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ASPHALT (ASTT I AND II)		
R 97	<p><i>FOP for AASHTO R 97, Sampling Asphalt Mixtures</i></p> <p><u>There were no revisions to the training materials proposed before the meeting.</u></p> <p><u>There are no revisions to the AASHTO method in 2022.</u></p> <p><u>Other revisions</u></p> <p>Lori said that Step 2 of the Attached Sampling Devices Procedure does not state the receptacle has to pass through the stream in each direction, it just states ‘twice.’ The committee found that it does state ‘once in each direction’ in the preface to the steps. The committee decided that since the preface also says ‘twice,’ the phrase ‘once in each direction’ should be moved to Step 2.</p> <p><u>Discussion item</u></p> <p>Gilbert asked the members if any agency has started using the auger method of sampling other than MDT. UDOT has been asked about trying it. Sean says ODOT allows mix to be sampled from the auger. Lori says that ITD may soon allow sampling there.</p> <p><u>Revisions to the training materials include:</u></p> <p><b>FOP (editorial)</b></p> <ul style="list-style-type: none"> <li>- Attached Sampling Devices             <ul style="list-style-type: none"> <li>▪ Move ‘once in each direction’ from opening paragraph to Step 2</li> </ul> </li> </ul> <p><b>Performance Exam Checklist</b></p> <ul style="list-style-type: none"> <li>- None</li> </ul> <p><b>PowerPoint</b></p> <ul style="list-style-type: none"> <li>- Revisions to match the FOP revisions</li> </ul> <p><i>These revisions will be included in the 2022 training materials.</i></p>	<p>DESNA BERGOLD</p>

TOPIC	Discussion / <i>Decision</i>	ACTION REQUIRED BY:
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R 47	<p><i>FOP for AASHTO R 47, Reducing Samples of Asphalt Mixtures to Testing Size</i></p> <p><u>There were no revisions to the training materials proposed before the meeting.</u></p> <p><u>There are no revisions to the AASHTO method in 2022.</u></p> <p><i>There are no revisions for this method for the 2022 training materials.</i></p>	
T 329	<p><i>FOP for AASHTO T 329, Moisture Content of Asphalt Mixtures by Oven Method</i></p> <p><u>Proposed revisions to the training materials:</u></p> <p>Dan suggested adding the US Customary equivalent to scale capacity. The committee agreed.</p> <p>Dan asked if Note 1 is really a note because it looks like a requirement.</p> <p style="padding-left: 40px;"><b>Note 1:</b> When using paper or other absorptive material to line the sample container ensure it is dry before determining initial mass of sample container.</p> <p>The committee determined that as it is an unusual circumstance it should stay a note.</p> <p>Dan asked if Note 2 from AASHTO should be added to the FOP.</p> <p style="padding-left: 40px;">Note 2—For repeatability between operators and/or laboratories, the difference between drying temperatures for samples should not exceed 9°C (15°F).</p> <p>The committee didn't feel it was necessary to add this note.</p> <p><u>The 2022 AASHTO methods revisions include:</u></p> <p>The 2022 AASHTO T 329 method will be revised upon publication with a new revision date and will include revisions to the oven in apparatus and thermometer.</p> <p>The committee decided to change the range of the thermometer to match AASHTO but decided that the readability in the FOP is better than the accuracy units in the AASHTO.</p>	

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TOPIC	Discussion / <i>Decision</i>	ACTION REQUIRED BY:
T 329	<p><u>Revisions to the training materials include:</u></p> <p><b>FOP</b></p> <ul style="list-style-type: none"> <li>- New date</li> <li>- New AASHTO date</li> <li>- Apparatus <ul style="list-style-type: none"> <li>▪ Changed thermometer range to meet 2022 AASHTO</li> </ul> </li> </ul> <p><b>Performance Exam Checklist:</b></p> <ul style="list-style-type: none"> <li>- None</li> </ul> <p><b>PowerPoint:</b></p> <ul style="list-style-type: none"> <li>- Revisions to match the FOP revisions.</li> </ul> <p><i>These revisions will be included in the 2022 training materials.</i></p>	DESNA BERGOLD
T 308	<p><i>FOP for AASHTO T 308, Determining the Asphalt Binder Content of Asphalt Mixtures by the Ignition Method</i></p> <p><u>Proposed revisions to the training materials:</u></p> <p>WAQTC previously proposed revisions to the AASHTO method to change ‘pan’ to ‘container’ for the receptacle that the burn off basket is emptied into. Desna proposed the same revision. Misty noticed that the FOP still references a ‘flat pan’ if the sample needs to be softened in the oven. The committee decided the apparatus should use both as these most likely will be different types of containers.</p> <p>Dan suggested rewording Note 2 and putting it in the Procedure as it isn’t optional. Note 2 will be added to the description of the ignition furnace in Apparatus.</p> <p>‘The furnace shall be designed to permit the operator to change the ending mass loss percentage from both 0.01 percent to 0.02 percent.’</p> <p>Dan said that the AASHTO has a note addressing trouble shooting if the scale doesn’t read correctly after the sample is inserted. ‘Differences greater than 5 g or failure of the furnace scale to stabilize may indicate that the specimen basket assembly is contacting the furnace wall.’ The</p>	

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TOPIC	Discussion / <i>Decision</i>	ACTION REQUIRED BY:

T 308	<p>committee agreed that this would be a good addition and added it as a note.</p> <p>Dan pointed out that the AASHTO includes a note on the maximum and minimum opening of the sample basket mesh. The committee decided that it was unnecessary to add it to the FOP.</p> <p>Dan recommended rewording Steps 3 and 13. This was approved.</p> <p>Desna proposed rewriting the steps that calculate the sample mass in method B. Subtracting the sample basket assembly mass from the total was in parentheses and was confusing. This was approved.</p> <p><u>The 2022 AASHTO methods revisions include:</u></p> <p>The 2022 AASHTO T 308 method will be revised upon publication with a new revision date and will include revisions to the thermometer in apparatus and a temperature range for the ignition furnace.</p> <p>The range of the ignition furnace will be revised to match AASHTO.</p> <p><u>Other revisions</u></p> <p>Gilbert said that this FOP does not include the reporting accuracy for percent binder in the Report section. Almost all the other FOPs do. The reason that the FOP doesn't include it is because the AASHTO doesn't. 0.01 percent was a proposed revision to AASHTO at one time, but some agencies use 0.1 percent, so it was left out.</p> <p>The WAQTC member agencies all use 0.01 percent. The committee agreed it should be included in the Report section.</p> <p><b>FOP</b></p> <ul style="list-style-type: none"> <li>- Apparatus           <ul style="list-style-type: none"> <li>▪ Changed Ignition Furnace Temperature and range to match 2022 AASHTO</li> <li>▪ Change Note 2 to not a Note, 'The furnace shall be designed to permit the operator to change the ending mass loss percentage from 0.01 percent to 0.02 percent.'</li> </ul> </li> </ul>	
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TOPIC	Discussion / <i>Decision</i>	ACTION REQUIRED BY:
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T 308	<ul style="list-style-type: none"> <li>▪ Added container and large flat pan.</li> <li>- Procedure Method A               <ul style="list-style-type: none"> <li>▪ Rearrange Steps 3 and 13</li> <li>▪ Rewrite Steps for calculating sample mass, ‘Calculate the mass of the sample by subtracting the mass of the sample basket from the mass of the sample and sample basket assembly and record to the nearest 0.1 g.’</li> <li>▪ Include Note from AASHTO, ‘Differences greater than 5 g or failure of the furnace scale to stabilize may indicate that the specimen basket assembly is contacting the furnace wall.’</li> </ul> </li> <li>- Procedure Method B               <ul style="list-style-type: none"> <li>▪ Rearrange Steps 6, 10, 15, and 18</li> <li>▪ Rewrite Steps for calculating sample mass, ‘Calculate the mass of the sample by subtracting the mass of the sample basket from the mass of the sample and sample basket assembly and record to the nearest 0.1 g.’</li> </ul> </li> <li>- Gradation               <ul style="list-style-type: none"> <li>▪ Change ‘flat pan’ to ‘container’</li> </ul> </li> <li>- Report               <ul style="list-style-type: none"> <li>▪ <math>P_b</math> to the nearest 0.01 percent or per agency standard</li> </ul> </li> </ul> <p><b>Performance Exam Checklist:</b></p> <ul style="list-style-type: none"> <li>- New date</li> <li>- Add Step 8b, ‘Internal scale reading zero?’</li> <li>- Add ‘cool to room temperature’ in Step 8 and 9</li> </ul> <p><b>PowerPoint:</b></p> <ul style="list-style-type: none"> <li>- Revisions to match the FOP revisions.</li> </ul> <p><i>These revisions will be included in the 2022 training materials.</i></p>	<p>DESNA BERGOLD</p>
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TOPIC	Discussion / <i>Decision</i>	ACTION REQUIRED BY:

T 209	<p><i>FOP for AASHTO T 209, Theoretical Maximum Specific Gravity (<math>G_{mm}</math>) and Density of Asphalt Mixtures</i></p> <p><u>Proposed revisions to the training materials:</u></p> <p>Dan asked if the committee wanted to add the mesh size from the AASHTO for the screen that covers the vacuum opening in the vacuum lid.</p> <p>The committee didn't feel it was necessary.</p> <p><u>The 2022 AASHTO methods revisions include</u></p> <p>The 2022 AASHTO T 209 method will be revised upon publication with a new revision date and will include:</p> <ul style="list-style-type: none"> <li>- Revised thermometers in apparatus range and accuracy revised</li> <li>- Added drying oven</li> <li>- Precisions and bias statement revised</li> <li>- Revisions proposed by WAQTC             <ul style="list-style-type: none"> <li>▪ Vacuum pressure in Apparatus</li> <li>▪ Short-term conditioning of plant-produced samples</li> <li>▪ Note 8 on short term condition of asphalt mixture samples</li> <li>▪ <math>15 \pm 12</math></li> <li>▪ Revisions to Standardization and Checks</li> </ul> </li> </ul> <p>These revisions will be reflected in the training materials.</p> <p><u>Revisions to the training materials include:</u></p> <p><b>FOP</b></p> <ul style="list-style-type: none"> <li>- New date</li> <li>- New AASHTO date</li> <li>- Apparatus to match 2022 AASHTO             <ul style="list-style-type: none"> <li>▪ Revise range of vacuum pump and vacuum measurement device</li> <li>▪ Thermometers: Thermometric devices accurate to <b>0.25°C (0.5°F) and with a temperature range of at least 20 to 45°C (68 to 113°F).</b></li> </ul> </li> </ul>	
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TOPIC	Discussion / <i>Decision</i>	ACTION REQUIRED BY:

T 209	<ul style="list-style-type: none"> <li>- Test Sample Preparation                             <ul style="list-style-type: none"> <li>▪ Add, ‘Plant-produced samples may be short-term conditioned according to R 30 as specified by the agency.</li> <li>▪ Add Note 1 (Note 8 from 2022 AASHTO, ‘Short-term conditioning at the specified temperature is especially important when absorptive aggregates are used. This short-term conditioning will ensure the computation of realistic values for the amount of asphalt absorbed by the aggregate and void properties of the mix. Plant-produced asphalt mixtures should be evaluated to make sure short-term conditioning has taken place during production and delivery.’</li> <li>▪ Revise ‘Allowable variation’ of two increments of a large sample from 0.014 to 0.013 due to new precision and bias statement.</li> </ul> </li> <li>- Procedure – General, revise 15 ±2 minutes to 15 ±1 minutes</li> <li>- Annex A                             <ul style="list-style-type: none"> <li>▪ Editorial revisions</li> <li>▪ Add moving average language for labs that check the bowl standardizations frequently</li> </ul> </li> </ul> <p><b>Performance Exam Checklist</b></p> <ul style="list-style-type: none"> <li>▪ New date</li> <li>▪ New Step 1, ‘O-ring wet or petroleum gel used?’</li> <li>▪ Revise 15 ±2 minutes to 15 ±1 minutes</li> </ul> <p><b>PowerPoint</b></p> <ul style="list-style-type: none"> <li>▪ Revisions to match the FOP revisions.</li> </ul> <p><i>These revisions will be included in the 2022 training materials.</i></p>	<p>DESNA BERGOLD</p>
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TOPIC	Discussion / <i>Decision</i>	ACTION REQUIRED BY:
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<p>T 166</p>	<p><i>FOP for AASHTO T 166, Bulk Specific Gravity (<math>G_{mb}</math>) of Compacted Asphalt Mixtures Using Saturated Surface-Dry Specimens</i></p> <p><u>Proposed revisions to the training materials:</u></p> <p>Dan said that the AASHTO method includes core condition information and terminology that the FOP does not. The committee said it should not be added.</p> <p>Dan had a couple of suggestion for Method B. He would like to add ‘and water’ when determining the mass of the filled volumeter. Dan also pointed out that in AASHTO, it states to fill the volumeter after the 10-minute soaking period. The FOP does not. The committee agreed to both suggestions and moved ‘at the end of the ten-minute period’ from Step 6 to Step 4.</p> <p>Dan asked if Note 2, ‘Method B is not acceptable for use with specimens that have more than 6 percent air voids,’ should be a note. The committee decided to leave it as a note.</p> <p><u>The 2022 AASHTO methods revisions:</u></p> <p>The 2022 AASHTO T 166 method will be revised upon publication with a new revision date and will include revisions to apparatus in methods A and B. They revised the oven temperature range to ‘of at least 40 to 60°C (104 to 140°F). They allow temperature range in Method C of 110 ± 5°C (230 ± 9°F). AASHTO also revised thermometers and water bath temperature.</p> <p>The committee discussed these revisions. They wondered how AASHTO re:source would interpret ‘capable of maintaining a uniform temperature at 25 ± 1°C (77 ± 2°F).’ Desna emailed Sonya and asked how re:source would verify the water bath. She emailed back that if the technician checked the water bath temperature before and after weighing the specimen that would be sufficient. The committee decided not to add the temperature in the apparatus because checking the temperature is already in the steps.</p> <p>The committee decided to add an Apparatus section in Method C, Rapid Test, to better identify that the oven needs to be capable of a higher temperature.</p>	
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TOPIC	Discussion / <i>Decision</i>	ACTION REQUIRED BY:
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T 166	<p><u>Discussion item</u></p> <p>The committee feels that drying the core in the rapid test at <math>230 \pm 9^{\circ}\text{F}</math> isn't very rapid. The core is intended to be destroyed. AASHTO T 329 allows the mix to be dried up to the job-mix formula (JMF) mixing temperature. That temperature would speed up the rapid test. The committee decided that revising the AASHTO method should be a Winter Meeting item. Either propose drying up to JMF mixing temperature or dry according to T 329. Misty indicated that if we were going to work on T 166 this winter, we ought to fix the paragraph formatting. Sean said he would talk to the Board about revisions to T 166.</p> <p><u>Revisions to the training materials include:</u></p> <p><b>FOP</b></p> <ul style="list-style-type: none"> <li>- New date</li> <li>- New AASHTO date</li> <li>- Apparatus Method A <ul style="list-style-type: none"> <li>▪ Revise oven temperature range to <math>52 \pm 3^{\circ}\text{C}</math> (<math>126 \pm 5^{\circ}\text{F}</math>)</li> <li>▪ Revise thermometer range to 15 to <math>45^{\circ}\text{C}</math> (59 to <math>113^{\circ}\text{F}</math>)</li> </ul> </li> <li>- Apparatus Method B <ul style="list-style-type: none"> <li>▪ Add, 'Water bath: For immersing the specimen in water, capable of maintaining a uniform temperature at <math>25 \pm 1^{\circ}\text{C}</math> (<math>77 \pm 2^{\circ}\text{F}</math>).</li> <li>▪ Revise oven temperature range to <math>52 \pm 3^{\circ}\text{C}</math> (<math>126 \pm 5^{\circ}\text{F}</math>)</li> <li>▪ Revise thermometer range to 15 to <math>45^{\circ}\text{C}</math> (59 to <math>113^{\circ}\text{F}</math>)</li> </ul> </li> <li>- Procedure Method B <ul style="list-style-type: none"> <li>▪ Add water bath temperature to Step 3</li> <li>▪ Move 'At the end of the ten-minute period,' from Step 6 to Step 4 to align with 2022 AASHTO</li> <li>▪ Steps 5 and 11, add 'and water' when determining filled pycnometer mass</li> </ul> </li> </ul>	
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TOPIC	Discussion / <i>Decision</i>	ACTION REQUIRED BY:
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T 166	<ul style="list-style-type: none"> <li>- Apparatus Method C <ul style="list-style-type: none"> <li>▪ Add Section and include, ‘Oven: Capable of maintaining a temperature of 110 ±5°C (230 ±9°F) for drying the specimens to a constant mass.</li> </ul> </li> <li>- Procedure Method C Rapid Method <ul style="list-style-type: none"> <li>▪ Change oven temperature for drying specimen in Step 4 from, ‘a minimum of 105°C (221°F). Do not exceed the Job Mix Formula mixing temperature,’ to, ‘110 ± 5 C (230 ± 9 F).’</li> </ul> </li> </ul> <p><b>Performance Exam Checklist</b></p> <ul style="list-style-type: none"> <li>- New date</li> <li>- Change temperature for drying specimen in Steps 4a and 6a from, ‘a minimum of 105°C (221°F)’ to, ‘110 ± 5 C (230 ± 9 F).’</li> <li>- Revise 77 ± 1.8°F to 77 ± 2°F</li> </ul> <p><b>PowerPoint</b></p> <ul style="list-style-type: none"> <li>- Revisions to match the FOP revisions.</li> </ul> <p><i>These revisions will be included in the 2022 training materials.</i></p> <p><i>Revisions to AASHTO T 166 will be a 2023 Winter Agenda item.</i></p>	DESNA BERGOLD
R 66	<p><i>FOP for AASHTO R 66, Sampling Asphalt Materials</i></p> <p><u>There were no revisions to the training materials proposed before the meeting.</u></p> <p><u>There are no revisions to the AASHTO method in 2022.</u></p> <p><i>There are no revisions for this method for the 2022 training materials.</i></p>	DESNA BERGOLD
T 30	<p><i>FOP for AASHTO T 30, Mechanical Analysis of Extracted Aggregate</i></p> <p><u>There were no revisions to the training materials proposed before the meeting.</u></p> <p><u>There are no revisions to the AASHTO method in 2022.</u></p>	

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TOPIC	Discussion / <i>Decision</i>	ACTION REQUIRED BY:

T 30	<p><u>Other revisions</u></p> <p>The committee noticed that the ‘check sum’ language should be revised to match the revisions to the FOP for AASHTO T 27/T 11.</p> <p><u>Revisions to the training materials include:</u></p> <p><b>FOP</b></p> <ul style="list-style-type: none"> <li>- New date</li> <li>- Add wetting agent in Apparatus</li> <li>- Steps 4 and 9 change, ‘detergent, dispersing agent, or other wetting solution,’ to ‘wetting agent’</li> <li>- Step 15 and Calculations, rewrite ‘check sum’ to agree with AASHTO, ‘is <b>not more than</b> 0.2 percent’</li> </ul> <p><b>Performance Exam Checklist</b></p> <ul style="list-style-type: none"> <li>- None</li> </ul> <p><b>PowerPoint</b></p> <ul style="list-style-type: none"> <li>- Revisions to match the FOP revisions</li> </ul> <p><i>These revisions will be included in the 2022 training materials.</i></p>	DESNA BERGOLD
T 312	<p><i>FOP for AASHTO T 312, Preparing and Determining the Density of Asphalt Mixture Specimens by Means of the Superpave Gyrotory Compactor</i></p> <p><u>There were no revisions to the training materials proposed before the meeting.</u></p> <p><u>The 2022 AASHTO methods revisions include:</u></p> <p>The 2022 AASHTO T 312 method will be revised upon publication with a new revision date and will include revisions to the thermometer.</p> <p><u>Revisions to the training materials include:</u></p> <p><b>FOP</b></p> <ul style="list-style-type: none"> <li>- New date</li> <li>- Add wetting agent in Apparatus</li> <li>- Steps 4 and 9 change, ‘detergent, dispersing agent, or other wetting solution,’ to ‘wetting agent’</li> </ul>	

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TOPIC	Discussion / <i>Decision</i>	ACTION REQUIRED BY:
	<ul style="list-style-type: none"> <li>- Step 15 and Calculations, rewrite ‘check sum’ to agree with AASHTO, ‘is <b>not more than</b> 0.2 percent’</li> </ul> <p><b>Performance Exam Checklist:</b></p> <ul style="list-style-type: none"> <li>- None</li> </ul> <p><b>PowerPoint:</b></p> <ul style="list-style-type: none"> <li>- Revisions to match the FOP revisions.</li> </ul> <p><i>These revisions will be included in the 2022 training materials.</i></p>	DESNA BERGOLD
TM 13	<p><i>WAQTC TM 13, Volumetric Properties of Asphalt Mixtures</i></p> <p><u>There were no revisions to the training materials proposed before the meeting.</u></p> <p><u>There are no revisions to the AASHTO method in 2022.</u></p> <p><u>Other revisions</u></p> <p>The Student FOP states that the in-production mix is obtained ‘in accordance with the FOP for AASHTO R 97’ but does not say to reduce the sample. The committee decided to add ‘and reduce according to the FOP for AASHTO R 47’ editorially.</p> <p><u>Revisions to the training materials include:</u></p> <p><b>Student FOP (editorial)</b></p> <ul style="list-style-type: none"> <li>- Add ‘and reduce according to the FOP for AASHTO R 47’</li> </ul> <p><b>Performance Exam Checklist</b></p> <ul style="list-style-type: none"> <li>- None</li> </ul> <p><b>PowerPoint:</b></p> <ul style="list-style-type: none"> <li>- Revisions to match the FOP revisions.</li> </ul> <p><i>These revisions will be included in the 2022 training materials.</i></p>	DESNA BERGOLD
EXAMS	<p>The exams will be revised to include new tolerances and temperatures.</p> <p><i>These revisions will be included in the 2022 training materials.</i></p>	DESNA BERGOLD

TOPIC	Discussion / <i>Decision</i>	ACTION REQUIRED BY:
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<b>SELF-CONSOLIDATING CONCRETE TESTING TECHNICIAN (SCCTT) MODULE</b>		
T 347 / T 351	<p><i>FOP for AASHTO T 347, Slump Flow of Self-Consolidating Concrete (SCC) and</i></p> <p><i>FOP for AASHTO T 351, Visual Stability Index (VSI) of Self-Consolidating Concrete (SCC)</i></p> <p><u>There were no revisions to the training materials proposed before the meeting.</u></p> <p><u>There are no revisions to the AASHTO method in 2022.</u></p> <p><i>There are no revisions for this method to the 2022 training materials.</i></p>	
T 345	<p><i>FOP for AASHTO T 345, Passing Ability of Self-Consolidating Concrete by J-Ring</i></p> <p><u>There were no revisions to the training materials proposed before the meeting.</u></p> <p><u>There are no revisions to the AASHTO method in 2022.</u></p> <p><i>There are no revisions for this method to the 2022 training materials.</i></p>	
TM 18	<p><i>WAQTC TM 18, Penetration Test for Static Segregation Resistance of Self-Consolidating Concrete (SCC)</i></p> <p><u>Proposed revisions to the training materials:</u></p> <p>Desna noticed that <i>ASTM C1712-20, Rapid Assessment of Static Segregation Resistance of Self-Consolidating Concrete Using Penetration Test</i>, is a newer version than the one that TM 18 is based on. Desna reviewed the newer ASTM and found that it now includes a step to clean the apparatus. ‘After obtaining the final reading, remove and clean the penetration apparatus. Wash the penetration apparatus and remove any free water on the surfaces of the hollow cylinder and the metal rod with a cloth or paper towel.’</p> <p>The committee agreed that the step should be included in the test method.</p> <p><u>Test Method Revisions</u></p> <p><b>Test Method</b></p> <p>- New ASTM date</p>	

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TOPIC	Discussion / <i>Decision</i>	ACTION REQUIRED BY:
	<ul style="list-style-type: none"> <li>- New date</li> <li>- Add Step 11, ‘Remove, clean, and dry the penetration apparatus.’</li> </ul> <p><i>These revisions will be included in the 2022 training materials.</i></p>	DESNA BERGOLD
TM 19	<p><i>WAQTC TM 19, Static Segregation of Self-Consolidating Concrete (SCC) Using the Column Method</i></p> <p><u>Proposed revisions to the training materials:</u></p> <p>Desna reviewed the new <i>ASTM C1610-21 Static Segregation of Self-Consolidating Concrete Using Column Technique</i>; it too is a newer version than the one the test method is based on.</p> <p>ASTM added a time limit to perform the rest of the test after the concrete has stabilized and revised the calculation.</p> <p>The committee agreed to including these revisions in the test method but wondered why the formula was changed to double the results.</p> <p><u>Test Method Revisions include</u></p> <p><b>Test Method</b></p> <ul style="list-style-type: none"> <li>- New ASTM date</li> <li>- New date</li> <li>- Procedure <ul style="list-style-type: none"> <li>▪ Add after Step 5, ‘Complete the following in 20 min. or less.’</li> <li>▪ Step 13 and 14, change ‘through’ to ‘on’</li> </ul> </li> <li>- Revise Calculation, ‘2 x’</li> </ul> <p><b>Performance Exam Checklist</b></p> <ul style="list-style-type: none"> <li>- New Step 11, ‘Complete the following in 20 min. or less.’</li> <li>- Revise Calculation, ‘2 x’</li> </ul> <p><i>These revisions will be included in the 2022 training materials.</i></p>	DESNA BERGOLD

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TOPIC	Discussion / <i>Decision</i>	ACTION REQUIRED BY:
EXAMS	<p>Revise formula for TM 19.</p> <p><i>These revisions will be included in the 2022 training materials.</i></p>	DESNA BERGOLD
<b>GENERAL FILES</b>		
	<p><u>There were no revisions to the training materials proposed before the meeting.</u></p> <p><u>Other revisions</u></p> <p>The committee decided to add ‘fracture criteria’ and its definition in the Terminology section.</p> <p><i>These revisions will be included in the 2022 training materials</i></p>	DESNA BERGOLD
<b>REVIEW ASSIGNMENTS</b>		
REVISION REVIEW ASSIGNMENTS	<p>During the 2021 Summer Meeting, the committee determined that the revision review assignments should be shuffled for 2022. The 2022 revision review assignments are:</p> <p>EB/DTT: Chris Russell and Lori Copeland</p> <p>General: Gilbert Arredondo and Sharon Taylor</p> <p>Concrete: Kevin Burns and Misty Miner</p> <p>Aggregate: Lori Copeland and Sharon Taylor</p> <p>Asphalt: Dan Gettman and Gilbert Arredondo</p> <p>Administration Manual and RPIH: Sean Parker and Misty Miner</p> <p>The committee members will review all the training materials: Student and Short FOPs, Review Questions, Performance Exams, Written Exams, and PowerPoint presentations for the module they are assigned. Desna will send friendly reminders every few days.</p> <p>Corrections will be sent to Desna.</p> <p>The committee decided that the example inputs in the training material should be updated next year. They decided that over the coming year, each committee member will develop new inputs for their revision review assignment items. Sean said that the easiest way to ensure the new inputs work is to put</p>	

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TOPIC	Discussion / <i>Decision</i>	ACTION REQUIRED BY:
	<p>them in a spreadsheet. Everyone said that if they develop a spreadsheet for their assignment, we could combine them all for a future use. Desna said she may have one started and would share. The committee also decided that the FOP for AASHTO R 75 should be revised.</p> <p>The committee also discussed new inputs for the calculations for the written exam. They decided that the written exam values should be changed soon and every five years thereafter. This should be included in the Operations Manual.</p> <p><i>Desna will send the draft revisions out by Sept. 6<sup>th</sup>. Review deadline is Sept. 20<sup>th</sup>.</i></p> <p><i>Committee members will review the draft revisions of the modules assigned. Corrections will be sent to Desna.</i></p> <p><i>Committee members will provide Desna with new inputs for the calculations in the training materials by May 1, 2023.</i></p>	DESNA BERGOLD QAC MEMBERS
POWERPOINT REHEARSING WITH COACH	<p>Recent PowerPoint editions include a ‘Rehearse with Coach’ or ‘Speaker Coach’ option that allows one to rehearse a presentation. Speaker Coach evaluates pacing, pitch, use of filler words, informal speech, euphemisms, and culturally sensitive terms, and detects when you're being overly wordy or are simply reading the text on a slide.</p> <p>After each rehearsal, it provides a report that includes statistics and suggestions for improvements.</p> <p>Desna wanted to know if anyone has used this tool and shared it with their trainers. The committee found that many of them did not have a current enough version of PowerPoint but thought it would make a good tool to improve training. Perhaps this would be a good justification for requesting new software.</p> <p><i>Discussion item only, no action necessary.</i></p>	
<b>FOP LIBRARY</b>		
T 84	<p><i>AASHTO T 84, Specific Gravity and Absorption of Fine Aggregate</i></p> <p><u>Proposed revisions to the training materials:</u></p> <p>During the Winter Meeting, Lori pointed out that Note 1 in the FOP from the FOP library should be a step rather than be a</p>	

TOPIC	Discussion / <i>Decision</i>	ACTION REQUIRED BY:
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	<p>note as it instructs the technician on the steps to take if the fine aggregate slumps on the first trial. As Lori is the Champion of this FOP, she drafted revisions for consideration.</p> <p><u>AASHTO Revisions</u></p> <p>The 2022 AASHTO T 84 method will be revised upon publication with a new revision date and will include revisions in the apparatus for ovens and thermometers.</p> <p>Revisions were approved.</p> <p><u>Discussion item</u></p> <p>Sean said that he is a member of a Technical Section Task Force reviewing this method. He said he would keep the committee informed of the Task Force’s progress.</p> <p><u>Revisions to the <b>FOP</b> include:</u></p> <ul style="list-style-type: none"> <li>- New date</li> <li>- New AASHTO date</li> <li>- Addition of the oven in Apparatus</li> <li>- Procedure <ul style="list-style-type: none"> <li>▪ Adding a new Step 12f that includes the action taken if the material slumps on the first attempt.</li> </ul> </li> </ul> <p><i>These revisions will be included in the 2022 FOP Library.</i></p>	<p>DESNA BERGOLD</p>
<p>T 304</p>	<p><i>AASHTO T 304, Uncompacted Void Content of Fine Aggregate</i></p> <p>Kevin withdrew this agenda item.</p> <p><i>No action required.</i></p>	
<p>TM 15</p>	<p><i>TM 15, Laboratory Maximum Dry Density of Granular Soil and Soil/Aggregate</i></p> <p><u>Proposed revisions to the training materials:</u></p> <p>Kevin and WSDOT had revisions to this method. He recommended adding a manual rammer in apparatus as it is used in the method. Kevin would like to include a step to obtain the sample for apparent specific gravity in Step 7 and 8 where the other samples are obtained. He presented revisions from Garth Newman, WSDOT, to include dimensions of the molds and change the term ‘cap’ to ‘follower.’</p>	

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<p>TM 15</p>	<p>The committee reviewed the sampling steps and revised them for clarity and removed the now redundant section on apparent specific gravity. Desna pointed out that the designation for the apparent specific gravity (<math>G_{ab}</math>) used in the test method is not consistent with the designation (<math>G_{sa}</math>) used in the rest of the training materials. She believes it is a hold over from one of the original methods and proposes revising it.</p> <p>These revisions were approved.</p> <p>Dan said that he would like to add misc. tools and a graduated cylinder to measure the water that is used. Kevin said that the water should be added by mass not volume. The committee agreed that ‘Miscellaneous tools including pans, spoon, trowel, mechanical mixer (optional), etc.’ should be included but not the graduated cylinder.</p> <p>Dan thought that AKDOT’s rate of loading is different than Table 3. But he isn’t certain and doesn’t currently recommend any revisions. He also said that his agency measures the height of the compacted specimen in four places. Kevin indicated that their follower is domed so they measure the highest point. Dan felt that the way the procedure is written doesn’t preclude multiple measurements and didn’t propose a revision.</p> <p>Kevin also had revisions to propose for the spreadsheet. He presented the version he has developed which includes truncating the volume of the sample and a column for another density determination. The committee approved Kevin’s revisions. Kevin will send the revised spreadsheet to Desna.</p> <p><u>Test Method Revisions include</u></p> <p><b>Test Method</b></p> <ul style="list-style-type: none"> <li>- New date</li> <li>- Use of <math>G_{sa}</math> throughout</li> <li>- Apparatus, add the following:             <ul style="list-style-type: none"> <li>▪ ‘Small Mold Assembly: includes mold, mold base, and mold follower,’ with dimensions for Mold and Mold Base.</li> <li>▪ ‘Large Mold Assembly: includes mold, mold base, and mold follower,’ with dimensions for Mold and Mold Base.</li> </ul> </li> </ul>	
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TM 15	<ul style="list-style-type: none"> <li>▪ ‘Mold Follower’ with dimensions</li> <li>▪ ‘Manually operated rammer: 2.5 kg (5.5 lb.) rammer meeting the requirements of the FOP for AASHTO T 99/T 180.’</li> <li>▪ ‘Miscellaneous tools including pans, spoon, trowel, mechanical mixer (optional), etc.</li> </ul> <p>- Procedure</p> <ul style="list-style-type: none"> <li>▪ Revise Step 7 to include Step 7c, ‘Obtain a representative sample of the remaining material and determine the apparent specific gravity (<math>G_{sa}</math>) according to AASHTO T 84 or Annex B.</li> <li>▪ Revise Step 8 to include Step 8c, ‘Obtain a representative sample of the remaining material and determine the apparent specific gravity (<math>G_{sa}</math>) according to FOP for AASHTO T 85 or Annex B.</li> <li>▪ Remove Apparent Specific Gravity section</li> <li>▪ Revise ‘cap’ to ‘follower’ throughout.</li> </ul> <p><b>Spreadsheet</b></p> <ul style="list-style-type: none"> <li>- Truncate volume values</li> <li>- Add columns for another density determination</li> </ul> <p><i>These revisions will be included in the 2022 FOP Library.</i></p>	DESNA BERGOLD
<b>WAQTC Items</b>		
YOUTUBE CHANNEL	<p>The committee got permission from the Board to develop a YouTube channel for training videos. Desna created the channel and uploaded the video content that Misty shared during the Winter Meeting. Desna also uploaded the videos that are embedded in the PowerPoint training materials. All the videos are ‘unlisted,’ this means that the content doesn’t appear on the channel, one needs the link to view it.</p> <p>Desna sent a spreadsheet with the videos listed and the links to the committee members. Desna said that committee should review and approve them before the video links are put on WAQTC’s webpage. Some are most likely ready right now. The committee was asked to review the videos and send comments and suggestions to Misty (cc Desna) by October 31<sup>st</sup>, 2022.</p>	

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	<p>Gilbert said that UDOT has been discussing creating videos for online training that could be added to the channel. Many other members are also considering creating videos for their own training which could be included. Misty pointed out that the video links can be included in the PowerPoint Presentations now.</p> <p>The Board suggested that the QAC create a timeline to develop videos. The committee will consider what additional content they want on the YouTube channel and then address the timeline.</p> <p><i>The committee members will review the YouTube videos and provide feedback to Misty by October 31<sup>st</sup>, 2022.</i></p>	QAC MEMBERS
<b>WAQTC ADMINISTRATION MANUAL AND REGISTRATION, POLICIES, AND INFORMATION HANDBOOK (RPIH)</b>		
RADIATION SAFETY	<p>Misty asked if all agencies are requiring a copy of the ‘Certification in Radiation Safety’ that is listed as a prerequisite in Annex A of the <i>Administration Manual</i>.</p> <p>Excerpt from Annex A:</p> <p style="padding-left: 40px;">Prerequisites for being qualified in In-Place Density:</p> <ul style="list-style-type: none"> <li>- Must hold an Approved Certification in Radiation Safety due to the operation of devices containing radioactive material.</li> </ul> <p style="padding-left: 40px;">(A copy must be included with registration submittal.)</p> <p>Everyone said that they do require proof of the radiation safety training. Gilbert said that UDOT’s online exam registration requires uploading a copy of the certification before a technician can register for testing.</p> <p>Misty said that due to delayed radiation safety training at MDT she has had to certify technicians with a dummy gauge before they have been able to take the course. She indicated that the TTQP certification is not active until the radiation safety training has taken place.</p> <p>Many said they don’t require a physical copy just of the certification especially if the technician is listed in and agency’s database as having been certified. The committee decided that they should propose a revision to Annex A to</p>	

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	<p>read, 'Proof of Radiation Safety training must be provided for registration.'</p> <p><i>This proposed revision will be presented to the Executive Board for approval.</i></p>	SEAN PARKER
REVISIONS	<p>Board approved the revision to remove 'Note' in the <i>Administration Manual</i> and <i>RPIH</i> under 'Certified Technician Registry.'</p> <p><i>Discussion item only.</i></p>	
R 25	<p>Randy wanted to draw the committee's attention to AASHTO R 25, Technician Training and Certification Programs Section 7.4. He said that defining the limits could be included in the <i>Administration Manual</i>.</p> <p>Excerpt from AASHTO R25:</p> <p>7.4. Re-Examination Policy–Written/Performance—When a participant fails a written/performance certification examination, some allowance should be provided for retesting. A policy should be established to address the following areas:</p> <ul style="list-style-type: none"> <li>■ Maximum number of retests allowed;</li> <li>■ When retesting will be permitted;</li> <li>■ Maximum time limit for retaking the written/performance examination; and</li> <li>■ Guidelines if the applicant fails the retest.</li> </ul> <p>7.4.1. The number of retests allowed and the time limits are needed to avoid frivolous, trial-and-error attempts and encourage the participants to properly prepare for testing. The reexamination policy will also influence the size of the test question database needed for written examinations.</p> <p>The committee reviewed the section and determined that the first bullet point was already a part of the <i>Administration Manual</i> and the other bullet points are defined by each agency.</p> <p><i>Discussion item only.</i></p>	

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OPERATIONS MANUAL		
	Board approved revisions to <i>Process for Revision Proposals to AASHTO Standards</i>	
REPORT FROM EXECUTIVE BOARD SPRING MEETING		
2022 STRATEGIC PLAN	<p>The committee reviewed the revisions to the planned work in the <i>2022 Strategic Plan</i>.</p> <p>The Board moved ‘Develop online training and identify means to make available as a field reference’ from long term goals to short term goals and listed ‘Develop online training and videos’ under 2022 Planned Work.</p> <p><i>Discussion item only.</i></p>	
OTHER ITEMS		
KRYTERION UPDATE	<p>WAQTC recently signed a contract with Kryterion to deliver written exams electronically.</p> <p><a href="http://webassessor.com">Western Alliance of Quality Transportation Construction (webassessor.com)</a></p> <p>Desna displayed the webpage that candidates would use to create a new account and login. She also showed the Webassessor roles and permissions. Desna is the Site Administrator, which is created by Kryterion, she will be able to create the Region Administrator roles for each agency representative. The Region Administrator has full access in their own region. There is a list of additional roles that can be created by the Site Administrator if needed.</p> <p>Each agency will be able to access scores and create reports.</p> <p>Desna said she has a meeting mid-August to find out how to format the exams for migrating into the system.</p> <p>Kryterion’s representative sent Desna copies of the default emails that the candidate receives. Desna asked the committee to review the email sand make recommendations for revisions.</p> <p>Currently the emails refer candidates to Desna if they have any questions. This will be changed to agency representatives.</p>	QAC MEMBERS

TOPIC	Discussion / <i>Decision</i>	ACTION REQUIRED BY:
	<p><i>The committee members will review the default emails from Kryterion and provide feedback.</i></p> <p><i>Desna will continue to work with Kryterion.</i></p>	DESNA BERGOLD
LOCATION OF UPCOMING MEETINGS	<p>The 2023 Winter Meeting will be held Jan. 30<sup>th</sup> through Feb. 3<sup>rd</sup>. The 2023 Summer Meeting will be held July 17<sup>th</sup> through the 21<sup>st</sup>.</p> <p>The committee would like to propose Arizona for the Winter Meeting. Sean said that it would be a good idea because Jesús Sandoval, ADOT, was interested in the WAQTC program for their work with AASHTO. He said that he would speak to Jesús and see if he would be interested in attending a portion of the meeting if the QAC went there. Sharon mentioned that airfare to Phoenix is cheap. We may see significant savings on that.</p> <p>The committee indicated that it would be nice to go back to Montana for the Summer Meeting. Misty said that it would be great to go to Helena and she already has a location in mind.</p> <p>The committee will propose Phoenix/Mesa area of Arizona for the Winter Meeting and Helena, MT. for the Summer Meeting.</p> <p><i>The locations for upcoming QAC Meetings will be presented to the Executive Board for approval.</i></p>	SEAN PARKER
OTHER	<p>Sean suggested that Desna add a correspondence folder to the annual distributed documents. The correspondence that committee members may need to reference would then have a place. Sean also suggested that the committee review the documents in the correspondence folder during the Winter Meetings.</p> <p><i>Desna will add a correspondence folder to the 'Training Materials and Organizational Documents' that is distributed each year.</i></p>	DESNA BERGOLD