



WAQTC
2022
Strategic Plan

Western Alliance for Quality Transportation Construction

2022 Strategic Plan



The Western Alliance for Quality Transportation Construction (WAQTC) is a voluntary organization whose membership recognizes the advantages of a unified effort leading to significant accomplishments.

The WAQTC is focused in three main areas:

1. Standardization of test methods (WAQTC, AASHTO, ASTM)
2. Certification of sampler / testers through the Transportation Technician Qualification Program (TTQP)
3. Working together on national programs of interest including research, training, and technology deployment

MISSION STATEMENT:

Provide leadership in the pursuit of continuously improving quality in transportation construction.

GOALS

To accomplish this mission, the WAQTC has established the following goals:

- **Promote an atmosphere of trust, cooperation, and communication among government agencies and the private sector.**
- **Respond in a unified and consistent manner to identified quality improvement needs and new technologies that impact the products we provide.**
- **Provide a forum to promote uniform test standards.**
- **Provide highly skilled, knowledgeable materials sampling and testing technicians.**
- **Provide reciprocity for qualified testing technicians among Accredited Contributing Members.**

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PLAN

To achieve the goals, the WAQTC has established this Strategic Plan to guide our efforts and prioritize the expenditure of funding in the coming years. The Executive Board, as defined in the WAQTC By-Laws, will oversee the execution of this plan through its Qualification Advisory Committee (QAC). The Board will review and update this plan annually and prioritize work for the coming year.

Promote an atmosphere of trust, cooperation, and communication among government agencies and the private sector.

On-going Activities

- **Update and maintain the WAQTC website.**

Long term Goals

- **Development of Presentation Materials**
Presentations on WAQTC: the benefits of membership, technology transfer opportunities, activity reports, training modules, etc.

Respond in a unified and consistent manner to identified quality improvement needs and new technologies that impact the products we provide.

On-going Activities

- **Evaluate training materials yearly for content**
Part of the ongoing QAC effort.
- **Member Agency teleconferences to share developments in training and certification platforms.**

Short term Goal

- **Develop online training and identify means to make available as a field reference.**

Provide a forum to promote uniform test standards.

On-going Activities

- **Identify proposed modifications or new AASHTO test methods through the QAC.**
The Executive Board will assign a champion for each proposed new or modified procedure. The champion will track progress of WAQTC proposed changes through the AASHTO process.

The WAQTC has become a powerful influence with the AASHTO Committee on Materials and Pavements (COMP) and the benefits/costs of this effort and the working committee (QAC) are included in the on-going efforts.

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- **Maintain a Field Operating Procedure (FOP) library**

Standardized FOPs for agencies to use creates consistency in test methods. Member agencies do not need to repeat the effort and expense of developing FOPs or state test methods.

Long term Goals

- **Evaluate the need for WAQTC training on equipment calibration, standardization, and checks process.**

Provide highly skilled, knowledgeable materials sampling and testing technicians.

On-going Activities

- **QAC Sub-Committee to Review Exam Question Selection**

The QAC will develop objectives for the written exam and assign a subcommittee to review question selection.

- **Develop an Exam question 'pool' for each discipline.**

- **Develop 3-5 New Questions per Year, per Module**

The QAC will develop new questions for each module each year to keep written exams fresh and current.

- **Maintain existing WAQTC Instructional Materials**

Keep instructional materials updated to current references and formatting.

Short term Goals

- **Investigate virtual written examinations.**

Form a subcommittee to explore written exam delivery remotely or through testing centers.

Long term Goals

- **Develop Electronic Question Database – Randomly Select Questions**

Develop enough exam questions that a database can create a randomly selected unique exam representing the identified aspects in order of the practice or test method for each participant.

- **Evaluate feasibility and ramifications of allowing the use of the training materials and qualification process by other entities.**

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Provide reciprocity for certified testing technicians among Accredited Contributing Members.

On-going activities

- **Communicate with non-member agencies on the benefits of membership.**
- **Reciprocity Audits of Member States**
Audit the WAQTC member organizations every three years to ensure qualification criteria are being adhered to within the program.
- **Operations Manual for WAQTC Member Agencies**

Long term Goals

- **Increase reciprocity to states outside of membership.**

2022 Planned Work

Priorities of the Executive Board:

- Continue work on 'on-going' activities.
- Evaluate existing training materials for needed improvements / updates.
- Member teleconferences to share developments in training and certification platforms.
- Implement virtual written examinations.
- Develop online training and videos.

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Appendix: 2021 Completed Items

- **Thorough review of written examination methodology**
Revised options on exam scoring in the *TTQP Administration Manual*.
- **Developed written examination to comply with ASTM D3740.**
Developed written exam questions for applicable test methods to meet the requirements of *ASTM D3740, Minimum Requirements for Agencies Engaged in Testing and/or Inspection of Soil and Rock as Used in Engineering Design and Construction*.

AASHTO revisions:

- **R 25, Technician Training and Qualification Programs** – Added references to the Appendixes and corresponding references in the reference section and removed ‘flexible’ from Section 3.1
- **R 100, Making and Curing Concrete Test Specimens in the Field** - Revised to correct the tamping rod length in Table 1 and revised the Test Method (T) to a Practice (R).
- **T 30, Mechanical Analysis of Extracted Aggregate** – Revised to Table A1.
- **T 85, Specific Gravity of Coarse Aggregate** – Added ‘according to T 255’ in Sections 8.1 and 8.5 and 122°F after 50°C in Sections 8.1 and 8.5.
- **T 88, Particle Size Analysis of Soils** – Moved Note 7 into 12.2, added dispelling foam with 3 drops of isopropyl alcohol, and deleted Figure 5.
- **T 99, Moisture-Density Relations of Soils Using a 2.5-kg (5.5-lb) Rammer and a 305-mm (12-in.) Drop** – Replaced the variables for density, W and D , with ρ , in calculations.
- **T 121, Density (Unit Weight), Yield, and Air Content (Gravimetric) of Concrete** – Changed ‘tap the sides’ to ‘tap around the perimeter’ in Section 7.4 Vibration and revised ‘sides’ to ‘side’ in Section 7.5.
- **T 152, Air Content of Freshly Mixed Concrete by the Pressure Method** – Changed ‘tap the sides’ to ‘tap around the perimeter’ in Section 9.1.3 and revise ‘sides’ to ‘side’ in Sections 9.1.4, 9.3.1, 9.3.3, 9.4.2, A1.7.2, and A1.7.3.
- **T 166, Bulk Specific Gravity (G_{mb}) of Compacted Asphalt Mixtures Using Saturated Surface-Dry Specimens** – Changed the term ‘samples’ to ‘specimens’ where appropriate and changed the temperature in the water bath from $25 \pm 1^\circ\text{C}$ ($77 \pm 1.8^\circ\text{F}$) to $25 \pm 1^\circ\text{C}$ ($77 \pm 2^\circ\text{F}$) in Sections 6.2, 9.2, 9.3, and 10.1.
- **T 272, One-Point Method for Determining Maximum Dry Density and Optimum Moisture** – Removed ‘or’ in 6.1.1, both statements are mandatory.

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- **T 180, Moisture-Density Relations of Soils Using a 4.54-kg (10-lb) Rammer and a 457-mm (18-in.) Drop** – Replaced the variables for density, W and D , with ρ , in calculations.
- **T 283, Resistance of Compacted Asphalt Mixtures to Moisture** – Extensive revisions for clarity, active voice, and reduce redundancy.
- **T 310, In-Place Density and Moisture Content of Soil and Soil-Aggregate by Nuclear Methods (Shallow Depth)** – Replaced the variables for density, W and D , with ρ , in calculations.
- **T 308, Determining the Asphalt Binder Content of Asphalt Mixtures by the Ignition Method** – Added a new Section 7.8, ‘Reset the internal balance to zero,’ revising ‘flat pan’ to ‘container’ in Section 9.1. Revised Sections 7.2 and 8.2 to say, ‘Use T 329 to oven dry the asphalt mixture specimen to a constant mass or determine the moisture content of a companion specimen.’
- **T 312, Asphalt Mixture Specimens by Means of the Superpave Gyrotory Compactor** – Revised T 168 references to R 97 and ‘binder’ and ‘HMA’ to ‘asphalt binder’ and ‘asphalt mixtures.’
- **T 329, Moisture Content of Asphalt Mixtures by Oven Method** – Replaced T 168 with R 97 in 2.1 and 5.1.
- **T 331, Bulk Specific Gravity (G_{mb}) and Density of Compacted Asphalt Mixtures Using Automatic Vacuum Sealing Method** – Removed redundant information and revised Formula 1.

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Appendix: 2020 Completed Items

- **Welcomed North Dakota Department of Transportation (NDDOT) to WAQTC**
- **Developed and implemented new qualification module ‘Self-Consolidating Concrete Testing Technician (SCCTT).**
- **Recreated and posted ‘Materials Revisions Request Form.’**
- **Training materials update.**
Formalized separate training materials for existing *Embankment & Base Testing Technician (EBTT)*, *In-Place Density Testing Technician (DTT)* and the combined *Embankment and Base Testing Technician/ In-Place Density Testing Technician (EBTT/DTT)* qualifications.
- **Developed the following FOPs for the FOP Library:**
 - **FOP for AASHTO T 84, Specific Gravity of Fine Aggregate**
 - **FOP for AASHTO R 79, Vacuum Drying Compacted Asphalt Specimens**
 - **FOP for AASHTO T 331, Bulk Specific Gravity (G_{mb}) and Density of Compacted Asphalt Mixtures Using Automatic Vacuum Sealing Method**
 - **WAQTC TM 15, Laboratory Theoretical Maximum Dry Density of Granular Soil and Soil/Aggregate**
 - **WAQTC TM 17, Determination of Theoretical Maximum Dry Density of Granular Soils and Soil/Aggregates for Use as a Density Standard**

AASHTO revisions:

- **T 11, Materials Finer Than 75- μm (No. 200) Sieve in Mineral Aggregates by Washing –** Added ‘Mechanical Washer’ to apparatus with a note with information on its use.
- **T 27, Sieve Analysis of Fine and Coarse Aggregate –** Moved discussions of overloading sieves, shaker time, and sieving efficiency into Annexes.
- **T 121, Density (Unit Weight), Yield, and Air Content (Gravimetric) of Concrete –** Replace the D with ρ to represent density.

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Appendix: 2019 Completed Items

- **Developed TM 14, Asphalt Mixtures Laboratory Prepared Specimens standard practice.**
- **Developed TM 16, Determining the Percentage of Flat and Elongated Particles in Coarse Aggregate**
- **Developed FOP for AASHTO T 304, Uncompacted Void Content of Fine Aggregate**
- **Performed Reciprocity Audits of Member States**
- **Developed WAQTC Travel policy**

AASHTO revisions:

- **PP 97; Determination of Constant Mass** – Developed new provisional standard. Many test methods and practices use the term without a definition or a discussion on how to achieve it.
- **R 39, Making and Curing Concrete Test Specimens in the Laboratory** – Extensive revisions which included adding steps for Self-consolidating Concrete (SCC), matching requirements in T 23, and further corrections to comply with AASHTO Style Manual.
- **R 47; Reducing Samples of Asphalt Mixtures to Testing Size** – Revisions include changing the term HMA to asphalt mixtures, maximum temperature for heating equipment, and adding heating of equipment in 10.1 and 12.1.
- **T 30; Mechanical Analysis of Extracted Aggregate** – Moved discussions of overloading sieves, shaker time, and sieving efficiency into Annexes.
- **T 99; Moisture-Density Relations of Soils Using a 2.5-kg (5.5-lb) Rammer and a 305-mm (12-in) Drop** – Assisted AASHTO re:source with revision proposals addressing the use of the extruder.
- **T 121; Density (Unit Weight), Yield, and Air Content (Gravimetric) of Concrete** – Revised the vibrator requirements to match *T 23, Making and Curing Concrete Test Specimens in the Field*.
- **T 152; Air Content of Freshly Mixed Concrete by the Pressure Method** – Revised the vibrator requirements to match *T 23, Making and Curing Concrete Test Specimens in the Field*.
- **T 180; Moisture-Density Relations of Soils Using a 4.54-kg (10-lb) Rammer and a 457-mm (18-in) Drop** – Assisted AASHTO re:source with revision proposals addressing the use of the extruder.
- **T 209; Theoretical Maximum Specific Gravity (G_{mm}) and Density of Asphalt Mixtures** – Extensive revisions

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Appendix: 2018 Completed Items

- Addressed copyright concerns on produced standards and reproduced training materials.

AASHTO revisions:

- R 18; Establishing and Implementing a Quality Management System for Construction Materials Testing Laboratories** – Added Note 17: ‘The standard test method may be any identified test method: international, national, regional, or agency.’
- R 25; Technician Training and Certification Programs** – Revised ‘qualification’ to ‘certification.’
- R 90, Sampling of Aggregate Products** – New AASHTO method.
- T 23, Making and Curing Concrete Test Specimens in the Field** – Removed references to carboard molds, split Note 8 into two notes for clarity.
- T 99; Moisture-Density Relations of Soils Using a 2.5-kg (5.5-lb) Rammer and a 305-mm (12-in) Drop** – Added equivalent more intuitive formula for calculating for calculating the corrected density for oversized particles (Section A1.6.)
- T 113, Lightweight Particles in Aggregate** – Removed kerosene and tetrabromoethane mixture for a heavy solution (5.1.2), added language in sample preparation to address fine and coarse aggregate (6), included decanting as an option for fine aggregate (7.1.4.2), and creating the ‘steps’ for the procedure (7).
- T 119; Slump of Hydraulic Cement Concrete** – Revised Section 4.2 in Significance and Use, to clarify removing aggregate retained on the 37.5 mm [1.5 in.] sieve. Revised into ‘Steps.’
- T 180; Moisture-Density Relations of Soils Using a 4.54-kg (10-lb) Rammer and a 457-mm (18-in) Drop** – Added equivalent more intuitive formula for calculating for calculating the corrected density for oversized particles (Section A1.6.)
- T 272, One-Point Method for Determining Maximum Dry Density and Optimum Moisture** – Included references to T 99 and T 180 when oversized particles are removed while performing the one-point determination and added to and corrected the Report section.
- T 355; In-Place Density of Asphalt Mixtures by Nuclear Methods** – Included an alternate method to determine in-place density: a single direction/location with a four-minute test. Other editorial revisions.