



Independent Assurance Program 2020

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Materials Quality Training

2021





Independent Assurance Program

- Why do we have it?
- What is its purpose?
- How do we evaluate?
- Who do we evaluate?
- How are we doing?
- Where do we need to be?





Independent Assurance Program

- Why do we have it?



Independent Assurance Program

Federally Mandated

- From 23 CFR 637

“Each STD’s quality assurance program shall provide for an acceptance program and an independent assurance program.”



Independent Assurance Program

Cost of Materials

- 50% of construction dollars for PURCHASE of materials.
 - 2019 WisDOT Construction = \$1.18 Billion
 - Material Cost = \$590 Million
 - Most of that must be sampled and tested.
 - Testing costs are small by comparison.



Independent Assurance Program

- What is its purpose?



Independent Assurance Program

Purpose

- Evaluate active samplers and testers working on WisDOT projects. (23 CFR 637)

“Activities that are an unbiased and independent evaluation of all the sampling and testing procedures used in the acceptance program.”



Independent Assurance Program

Purpose

- Evaluate active samplers and testers working on WisDOT projects. (23 CFR 637)
 - Unbiased
 - Independent





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- How do we evaluate?



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Evaluation Methods – Preferred one or more of the following is utilized:

1. Split Sample Testing
2. Proficiency Sample Testing
3. Witnessing Sampling & Testing
4. Equipment Calibration Checks
5. Review data and available process control information.
6. Request Additional Sampling and Testing

Independent Assurance Program

Evaluation Methods - Recommendation

Split or
Proficiency
Paired with
Witnessing

Highest
Reliability of IA
Evaluations

Higher
Reliability of
the Testing
Technician

Increased
confidence in
test results



Independent Assurance Program

Aggregate and Nuc Density Tolerance Limits

+/- TOLERANCE LIMIT % BY WEIGHT PASSING (WASHED SIEVE ANALYSIS)

Sieve Size	Dense-Graded Base	Fine - Concrete Masonry	Coarse - Concrete & Open Grade	Asphaltic Mixtures
1.5 - Inch (37.5 mm)	6.0	-	6.0	6.0
1 - Inch (25.0 mm)	6.0	-	6.0	6.0
3/4 - Inch (19.0 mm)	5.0	-	6.0	6.0
1/2 - Inch (12.5 mm)	6.0	-	6.0	6.0
3/8 - Inch (9.5 mm)	7.0	-	7.0	6.0
No. 4 (4.75 mm)	5.0	2.0	5.0	5.0
No. 8 (2.36 mm)	5.0	4.0	4.0	4.0
No. 10 (2.00 mm)	5.0	4.0	4.0	4.0
No. 16 (1.18 mm)	4.0	4.0	4.0	4.0
No. 30 (0.600 mm)	4.0	3.0	4.0	3.5
No. 40 (0.425 mm)	4.0	3.0	4.0	3.5
No. 50 (0.300 mm)	4.0	3.0	3.0	3.5
No. 100 (0.150 mm)	2.0	2.0	2.0	2.0
No. 200 (0.075 mm)	2.0	1.5	1.5	2.0

AGGREGATE MOISTURE CONTENT

Aggregate Size	+/- Tolerance Limit
Concrete Aggregates	0.50%

FRACTURED PARTICLES

Aggregate Size	+/- Tolerance Limit
Coarse Agg - No. 4 Retained	10.00%

NUCLEAR DENSITY

Mixture Property	+/- Tolerance Limit
Single Test - Same Footprint	1.5 lbs/ft ³
3 / 5 Test Average - Same Footprints	1.5 lbs/ft ³



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Asphalt & PCC Concrete Tolerance Limits

ASPHALTIC MIXTURES

Mixture Property	+/- Tolerance Limit
Gmb (Gyratory Bulk Specific Gravity)	0.030
Gmm (Maximum Specific Gravity)	0.020

CONCRETE MIXTURES

Mixture Property	+/- Tolerance Limit
Air Content	0.50%
Slump	1/2 - Inch
Temperature	2° Fahrenheit



Teach

- Additional Training
- Correct mistakes
- Be a resource

Not Bust

- Not into the gotcha' game.
- Nervous testers make bad testers.

Independent Assurance Program

- Who do we evaluate?



Independent Assurance Program

Approach & Coverage

- WisDOT utilizes a system-base approach.
- IA evaluation coverage rate 90%.



Independent Assurance Program

Certified vs. Active

NO. OF HTCP CERTIFIED TECHNICIANS 2020 vs. NO. OF ACTIVE TESTERS 2020

TEST TYPE	CERTIFICATION	NO. OF CERTIFIED TESTERS	NO. OF ACTIVE TESTERS
<i>GRADATION SAMPLE/TEST</i>	<i>AGGTEC-I/TMS</i>	1740	492
<i>PCC - TEMP/AIR/SLUMP</i>	<i>PCCTEC-I</i>	1647	470
<i>PCC STRENGTH TESTING</i>	<i>CST</i>	384	108
<i>ASPHALT MIX TESTING</i>	<i>HMA-IPT</i>	500	112
<i>SOILS/HMA DENSITY</i>	<i>NUCDENSITYTEC-I</i>	782	253

Independent Assurance Program

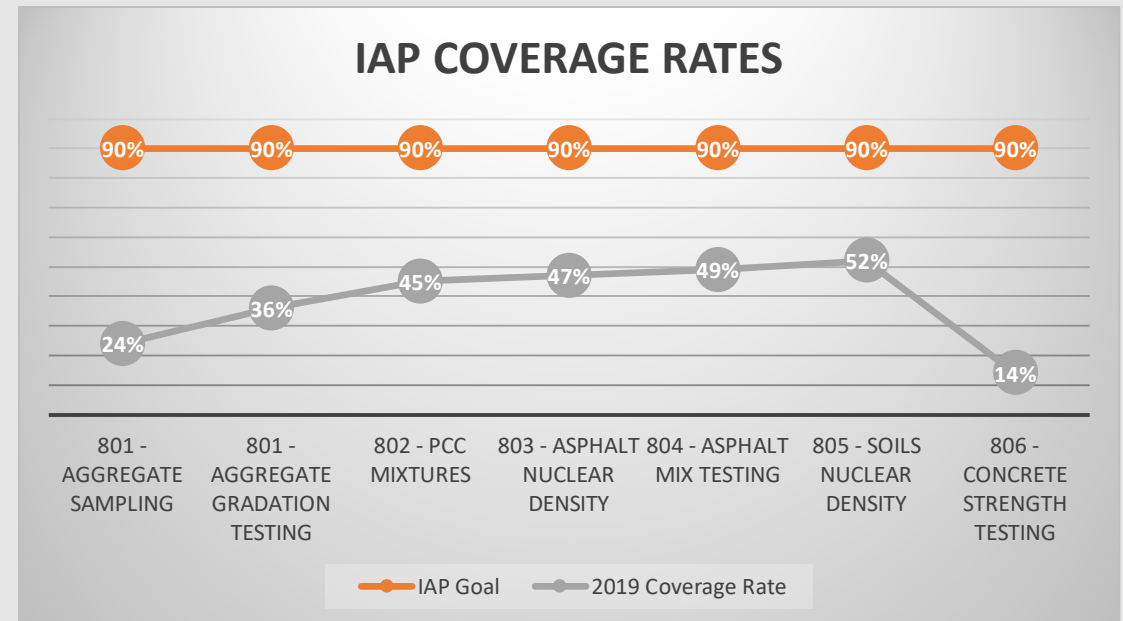
- How are we doing?



Independent Assurance Program

2019 IAP Coverage Rates

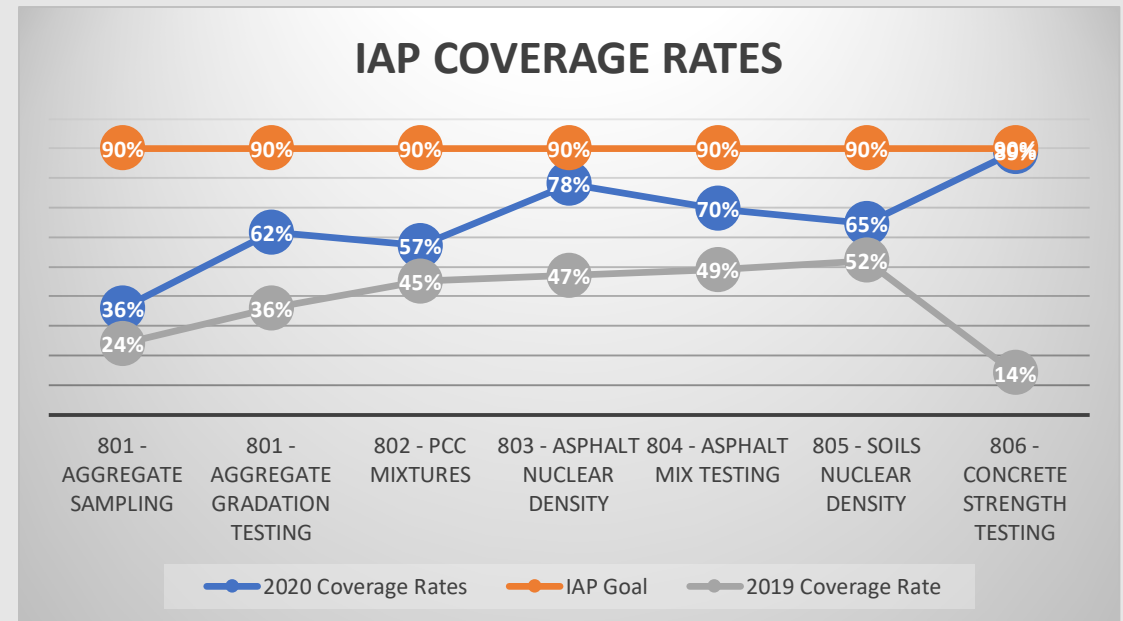
- 2019 rates fell short.
- Improvements needed.
- Significant improvement in 2020.



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2020 IAP Coverage Rates

- Significant improvement made.
- 10% increase across the board.
- 2020 rates still short.





Independent Assurance Program

- Where do we need to be and how do we get there?



Independent Assurance Program

Milestones Going Forward

- Milestone for 2021 80% coverage rate.
- Milestone for 2022 90% coverage rate.





Independent Assurance Program

Improvement Plan

- Developed 2020.
- Basis for current and future improvement.





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Improvement Plan

1. Tracking
2. Staffing
3. Communication



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Tracking

- Spreadsheet developed 2020.
- Using reports from Atwood can track active testers.
- Get up to date coverage rates.





Last Name	First Name	Company	Cert Type (Drop Down)	Region	Date Evaluated	Material Tested (Drop Down)	Test Number	Reviewed By	Follow-up (Drop Down)	Follow-up Date	Follow-up Test Number	Follow-up Reviewed By	Remarks
Kubash	James	WisDOT - SER Waukesha	3-Year		7/22/2020	Base Comp.	2-805-5-2020	Jeff Bruesewitz	No				
Ogburn	Donald	AECOM	3-Year										
Webb	Matthew	AECOM	3-Year										
Drehmel	Justin	American Engineering Testing	3-Year		8/18/2020	MSE Wall	6-805-1-2020	Thomas Portman	No				
Thomson	Cory	Ayres	3-Year										
Gaugh	Adam	Ayres Associates	3-Year										
Dier	Austin	BATC	3-Year		9/2/2020	Base Comp.	0-805-4-2020	Anthony Rosling	No				
Koch	Henry	Bay Area Testing and Consulting	3-Year		10/5/2020	QMP Subgrade	7-805-1-2020	Steven Hunter	No				
Stack	Stephen	Behnke Materials Engineering LLC	ACT		8/19/2020	MSE Wall	1-805-11-2020	Matt Platt	No				
		Behnke Materials Engineering LLC											
Stack III	Robert		3-Year										
Sather	Adam	BME	3-Year		6/18/2020	MSE Wall	1-805-7-2020	Matt Platt	No				
Clark	Benjamin	CEP Engineering, LLC	3-Year										
Vang	Tony	CGC Inc	3-Year		6/23/2020	MSE Wall	1-805-2-2020	Scott Syron	No				
Choate	David	CGC Inc	3-Year		6/25/2020	MSE Wall	1-805-4-2020	Scott Syron	No				
Saari	Paul	Coleman Engineering	3-Year										
Winter	Matthew	CORRE Inc.	3-Year		6/18/2020	MSE Wall	1-805-8-2020	Matt Platt	No				
Porter	Nicholas	ECS Midwest	3-Year		9/1/2020	QMP Subgrade	0-805-6-2020	Theresa Janicki	No				Spoke with Mike Bohn about Project spec
													Discussed with Mike Bohn Issues with Dry Back
Harrison	Wayne	Geotest	3-Year		8/13/2020	MSE Wall	0-805-1-2020	Theresa Janicki	No				
Dahl	Tom	Geotest	3-Year		6/17/2020	MSE Wall	1-805-6-2020	Matt Platt	No				
Schmidt	Bradley	Geotest	3-Year		7/6/2020	QMP Subgrade	2-805-3-2020	Jeff Bruesewitz	Yes	7/27/2020	2-805-6-2020	Jeff Bruesewitz	Passes on followup
Soni	Hitendra	Geotest	3-Year		7/7/2020	QMP Subgrade	2-805-4-2020	Jeff Bruesewitz	No				
Lock	Benny	Gestra	ACT		4/9/2020	MSE Wall	1-805-1-2020	Matt Platt	No				(2) 1-805-5-2020
Persenico	Carl	Gestra	3-Year		6/23/2020	MSE Wall	1-805-3-2020	Scott Syron	No				(2) 1-805-10-2020
Thomas	Nathan	Gestra	ACT		8/18/2020	Base Comp.	2-805-7-2020	Jeff Bruesewitz	No				
Lowery	Patrick	Gestra Engineering Inc	3-Year										
Pierce	Joshua	Gestra Engineering Inc	3-Year										
Dobyns	Jessica	Gremmer	3-Year		8/13/2020	MSE Wall	0-805-2-2020	Theresa Janicki	No				
Hintz	Scott	Gremmer	3-Year		9/2/2020	Base Comp.	0-805-3-2020	Anthony Rosling	No				
Beyer	Chad	Gremmer	3-Year		8/18/2020	MSE Wall	6-805-2-2020	Thomas Portman	No				
Miller	Terry	Interra	3-Year		10/19/2020	QMP Subgrade	2-805-11-2020	Jeff Bruesewitz	No				
Asfour	Moayad	Interra	3-Year		6/16/2020	QMP Subgrade	2-805-1-2020	Jeff Bruesewitz	No				
Chavez	Isaac	Interra	3-Year		9/16/2020	QMP Subgrade	2-805-8-2020	Jeff Bruesewitz	No				
Harrison	Emily	JT Engineering Inc	3-Year		6/30/2020	MSE Wall	1-805-9-2020	Matt Platt	No				
Kuprin	Oleksiy "Alex"	JT Engineering Inc	3-Year										
Romenesko	Anne	JT Engineering Inc	3-Year										
Wilson	Bob	JT Engineering Inc	3-Year										
Parker	Jason	Kapur	3-Year		9/3/2020	QMP Subgrade	0-805-5-2020	Anthony Rosling	No				
Schmidt	Sawyer	Michels Corp.	3-Year		9/24/2020	Base Comp.	2-805-10-2020	Jeff Bruesewitz	No				
Walls	Charlie	Michels Corp.	3-Year		10/28/2020	Base Comp.	2-805-12-2020	Jeff Bruesewitz	No				
Zeinert	Eric	Michels Corp.	3-Year		9/24/2020	Base Comp.	2-805-9-2020	Jeff Bruesewitz	No				
Hribar	Jason	MSA Professional Services Inc	3-Year		10/5/2020	QMP Subgrade	7-805-2-2020	Steven Hunter	No				
Tuescher	Colten	R. H. Batterman & Co Inc	3-Year		8/19/2020	MSE Wall	1-805-12-2020	Matt Platt	No				
Olinger	Jonathan	R. H. Batterman & Co Inc	3-Year										
Scott	Jeffrey	R. H. Batterman & Co Inc	3-Year										
Subak	Ellyn	R. H. Batterman & Co Inc	3-Year										
Haney	Andrew	Rock Road Co Inc	3-Year										
Slawson	Andrew	Rock Road Co Inc	3-Year										
Emmons	Paul	WisDOT - SER Waukesha	3-Year		6/16/2020	QMP Subgrade	2-805-2-2020	Jeff Bruesewitz	No				

Total Techs:

48

3-Year:

45

ACT:

3

Base Comp.:

7

Pulverize/Relay

0

MSE Wall

14

QMP Subgrade

10

CIR

0

Total Reviewed:

31

Coverage Rate

65%

Total Not Reviewed

17

Follow Up

1





Independent Assurance Program

2019 Staffing Issue

- Four IA vacancies.
- Contributing factor in 2019.



Independent Assurance Program

2020 Staffing

- Vacancies filled.
- Addition of two consultants from Quest.





Independent Assurance Program

Communication

- Virtual bi-monthly IA meeting.
- Improved communication from Statewide Coordinator with region IA Specialists.
- Promote cross-region communication between IA Specialists.





Independent Assurance Program

Communication

- Communication between project staff and materials staff.
- Integral in meeting statewide goal.





Independent Assurance Program

Communication

1. Materials staff to receive the Weekly Construction Updates.
2. Pre-pour and pre-pave meetings.
3. Independent Assurance Program standing topic.



Independent Assurance Program

Communication

4. Contact the IA specialists prior to QMP material is being placed.





Independent Assurance Program

Conclusion

- Must understand the critical nature of materials.
- Important role the Independent Assurance Program plays.
- Communicate



Independent Assurance Program

What questions do you have?



Questions are the path to learning