77th IAPA Annual Meeting, March 2014
Qc Managers' Committee - Goals, Priorities, & Accomplishments

The Purpose of the IAPA QC Managers Group:

- To identify opportunities to improve Illinois' asphalt specification to promote an appropriate balance of better safety, higher quality & lower cost.
- To communicate the opportunities for improvement to the IAPA Executive Director.
- To meet with agency representatives as directed and coordinated by the IAPA Executive Director.

The Structure of the IAPA QC Managers Group:

- **Membership**:
  - Open to QC management employees of IAPA producer member companies.

- **Chair & Vice Chair**: Elected by the QC mangers to a two year term at the annual convention

- **Leadership Team**: Shall consist of the Chair, Vice Chair and 5 members appointed by the Chair

- **Board Liaisons:** Shall consist of two IAPA Board members appointed by the IAPA Executive Director

- **Chair**: Pat Koester (Howell)
- **Vice Chair**: John Lavallee (Curran)
- **Leadership Team**:
  - John Diel (UCM)
  - Jeff Kern (Open Road)
  - Frank Mathewson (Iroquois)
  - Bill Pine (Heritage)
  - Mike Schilke, (Central Blacktop)
- **Board Liaisons:**
  - John Healy (Arrow Road)
  - Hugh Gallivan (Open Road)

Past Chair Persons:

- Paul Wilson (Civil)
- Frank Mathewson (Iroquois)
- Doug Jury (William Charles Constr.)(Geocom)

IAPA Qc Managers Group - Goals

- Leadership Team
  - 14 different issues
- Questionnaire
  - 35 Questions
- Narrow down to 5 Goals

IAPA Qc Managers Group - Goals

1) Reduction in Number of Designs
2) ABR & Percent of RAP / FRAP / RAS
3) Edge of Pavement
4) Limits of Precision & Appeal Process
5) Continuing Education

Reduction in Number of Designs / ABR

- 2 % @ 30 Gyrations
- @ 4% Voids
  - 30
  - 50
  - 70
  - 80
  - 90
  - 105

Reduction in Number of Designs / ABR

- 9.5L Surface / 19.0L Binder
- 4.75 Surface / 9.5 Fine Graded
- 9.5 “C” “D” “E” “F” Surface
- 12.5 Binder / “D” “E” “F” Surface
- 19.0 Coarse Graded Binder
  19.0 Binder
- 19.0 Fine Graded Binder
- 25.0 Coarse Graded Binders
- SMA

Reduction in Number of Designs / ABR

HMA Mixtures 1/, 2/	FRAP/RAS Maximum ABR %		
Ndesign	Binder/Leveling Binder	Surface	Polymer Modified 3/, 4/
30	50	40	10
50	40	35	10
70	40	30	10
90	40	30	10
105	40	30	10

Reduction in Number of Designs / ABR

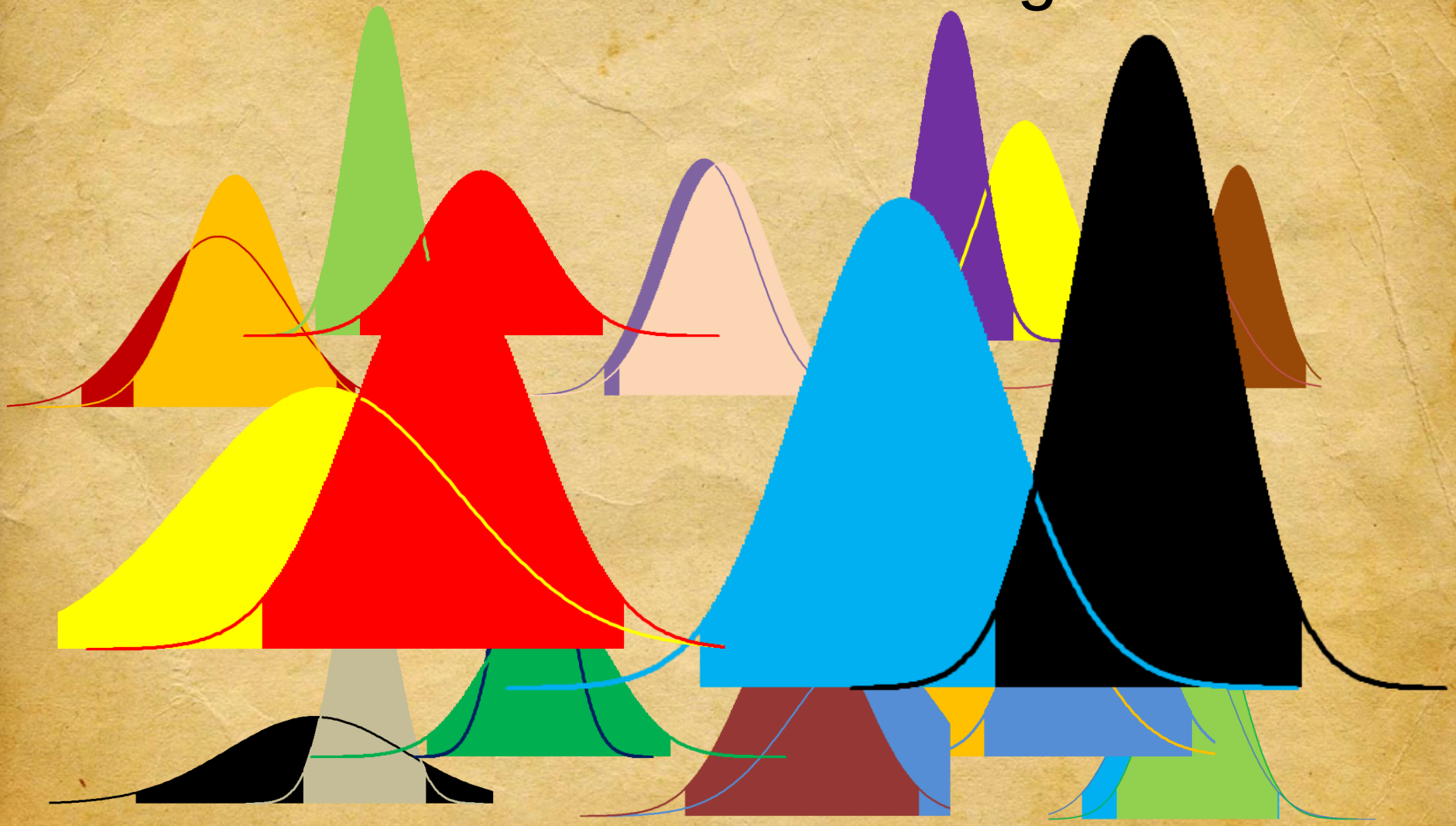
- Different Aggregates
  - Limestone
  - Dolomite
  - Gravel
  - Trap Rock
  - Slag (Air Cooled / Steel)
  - Sand Stone
  - Concrete
- Different Sources
- Different Asphalt Grades

Reduction in Number of Designs / ABR

- Virgin Designs
- Recycle Designs
- Allowed ± 5 to ± 10% Recycle Swing
- RAS

28 53 78 103

Reduction in Number of Designs / ABR



Reduction in Number of Designs / ABR

–Committee Formed

- Address Higher ABR
- Reducing Number of Designs

Edge of Pavement

- Issue
  - Potentially High Penalties
    - Even with Best Paving Practices
  - Core Location
    - Shoulder
    - Safety Wedge
  - Base
    - Condition
    - Unmilled Surface
    - Tack Coat
    - Varying Thickness

Edge of Pavement / Future?

- Tack Coat “New Spec”
- Mix Change
  - Gradation
  - VMA
- Pilot Project in District 4
  - Joint Treatment
- Longitudinal Joint Seal
- Rapid Penetrating Emulsion (RPE)

Edge of Pavement / Future?

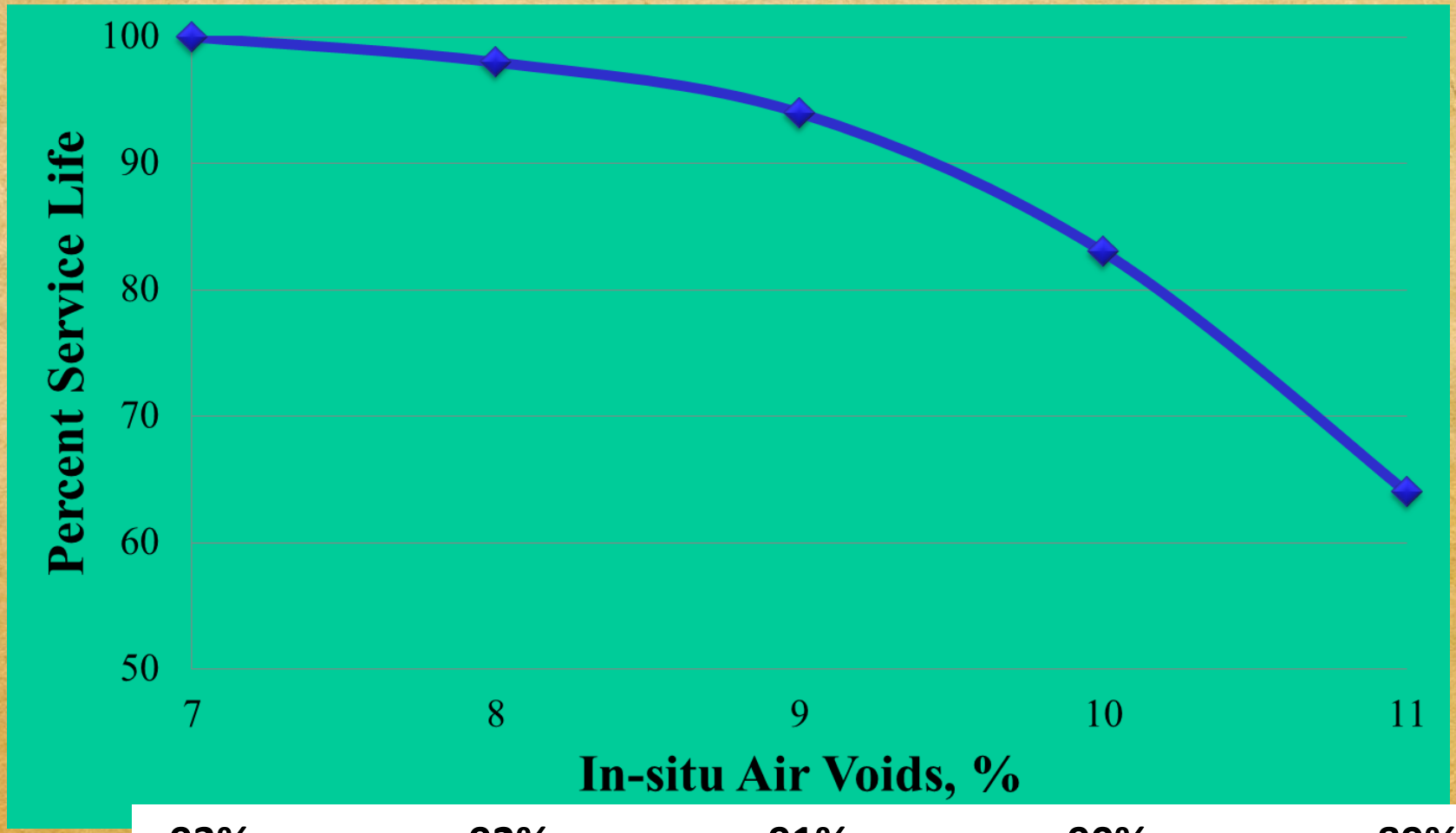
- Longitudinal Joint Seal for C.L Joints
  - No Longitudinal Density @ C.L.
- Unless
  - Paved against Confined Edge
  - Full Width or Echelon Paving
  - Remove Low Density Mat'l (i.e. 8")
    - »Joint treatment

Edge of Pavement / Future?

- Penalties eliminated Provided use of Rapid Penetrating Emulsion Applied
  - –Guide will be developed
  - –Maximum Permeability allowed
  - –May take Multiple Passes

Effect of In-Place Voids on Life

Washington State DOT Study



Edge of Pavement / Future? Surface Mix – Erase Penalties If:

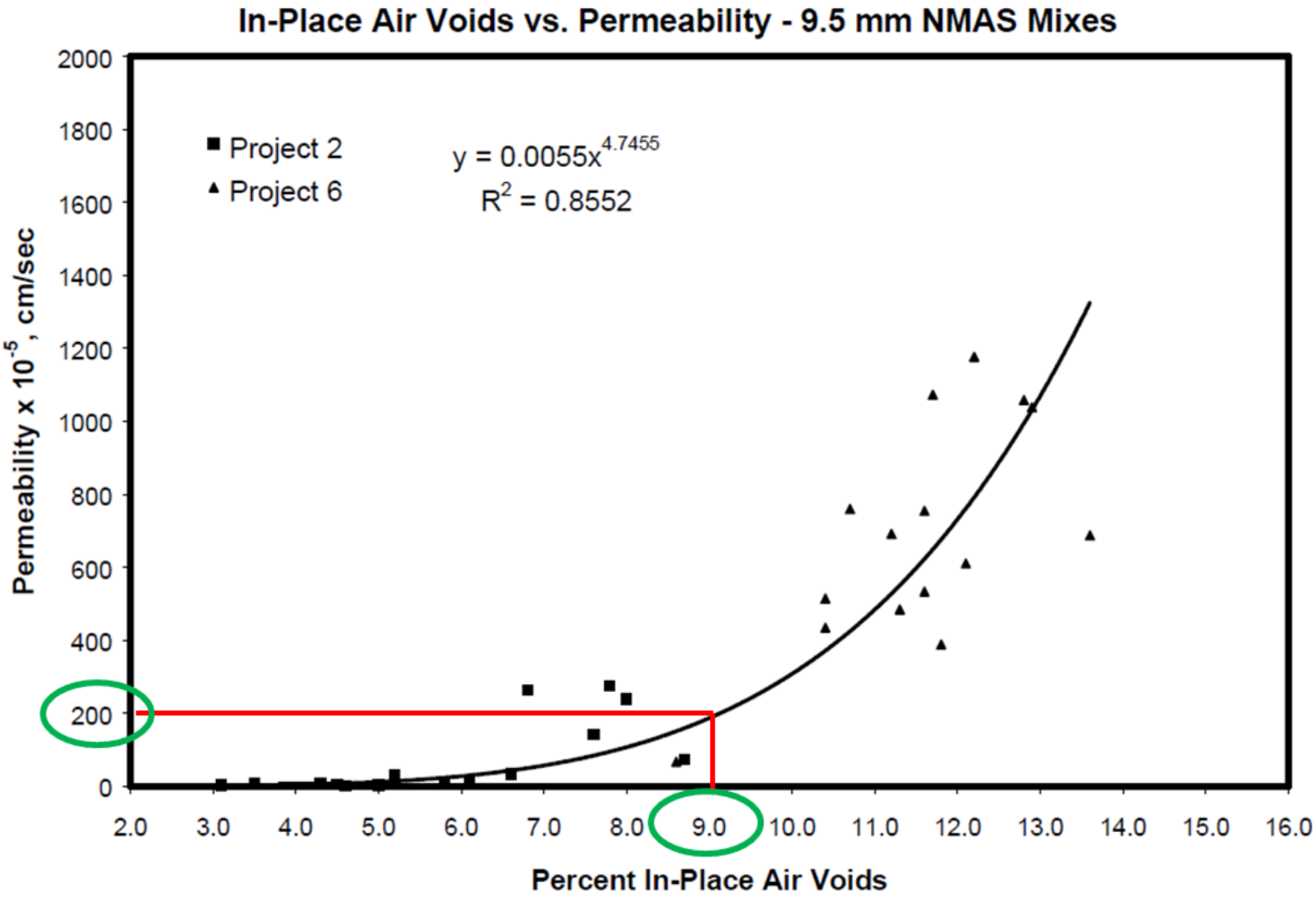


Figure 5. Field Permeability-Density Relationship for 9.5 mm NMAS Mixtures

Edge of Pavement / Future? Binder Mix – Erase Penalties If:

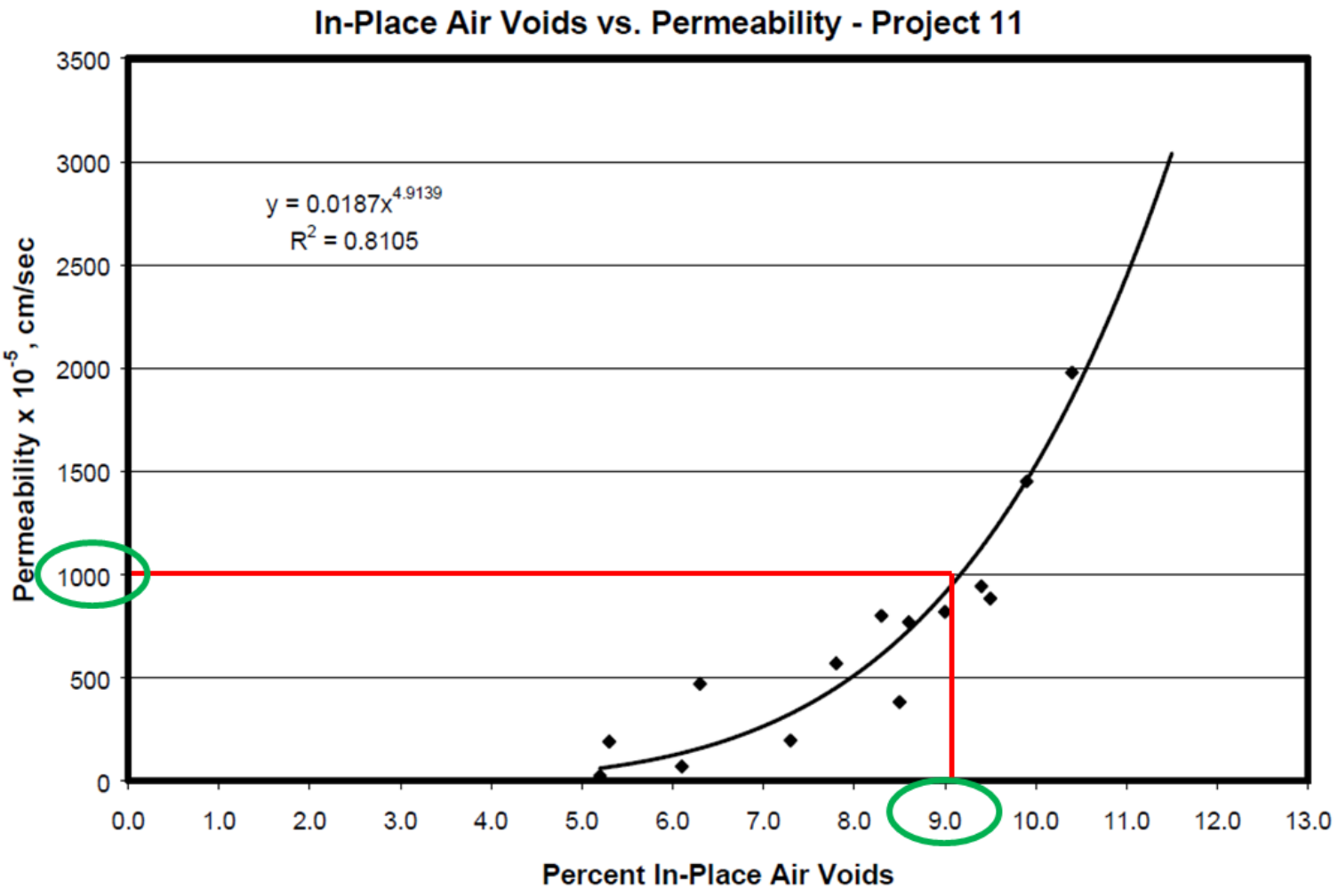


Figure 3. Field Permeability-Density Relationship for Project 11 (19.0 mm NMAS Mix)

Limits of Precision, Appeal Process, & Continuing Education

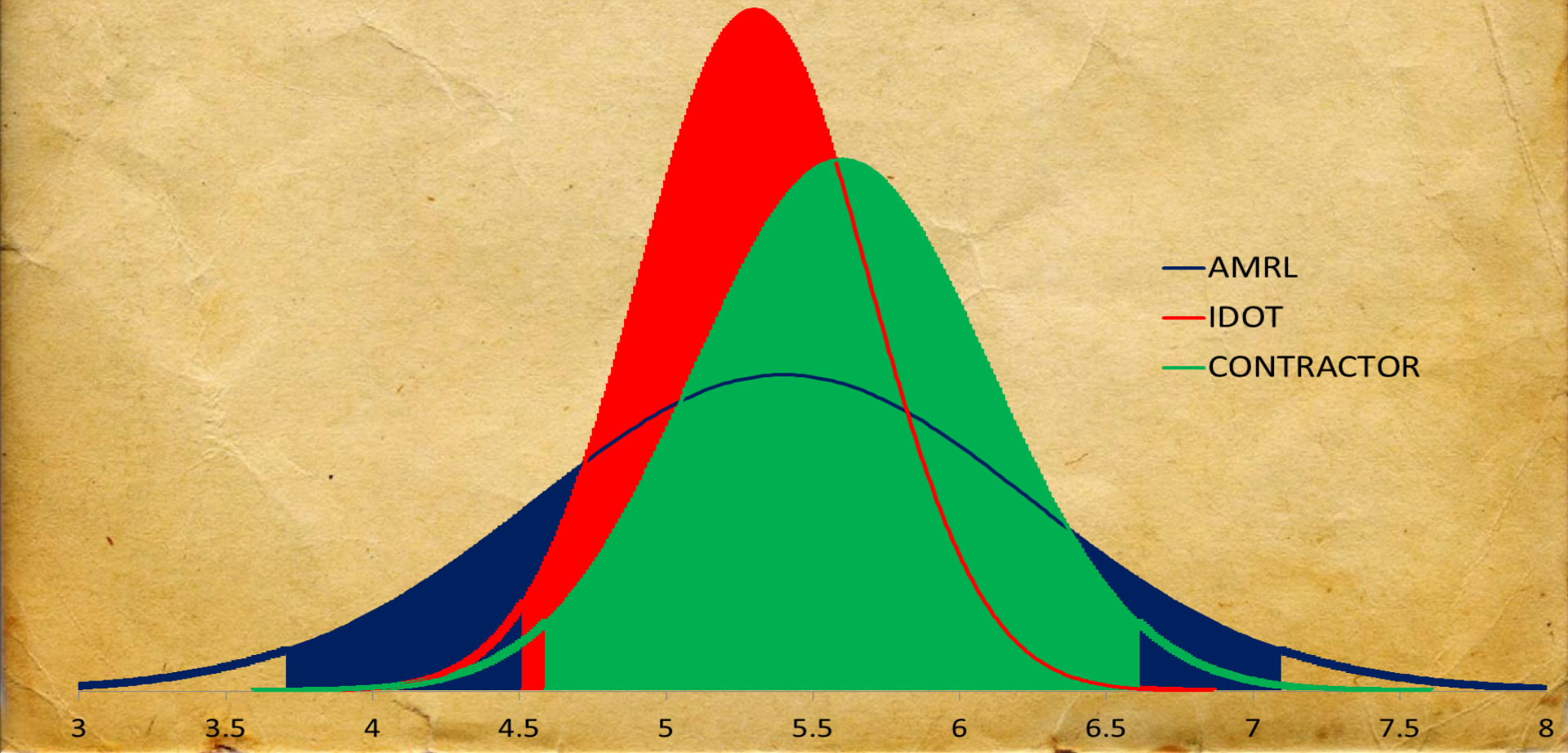
- Issue
  - Running with Offset
    - Variable
      - » Cause Uncertainty
        - Increases Risk
    - Voids / VMA
      - » (0 to 1%+)
        - High Offset can Effect Dispute

Limits of Precision, Appeal Process, & Continuing Education

- Variability Caused By:
  - Segregated Sample
  - Absorption
    - Aging - Oxidizing
    - Handling
    - Ovens
  - Gyratory Compactors
    - Troxler – 3 Pine - 2
    - IPC Servopac – 1 Brovold - 1

Limits of Precision, Appeal Process, & Continuing Education

–Round Robin 2014 Voids Offset - 0.4%



Limits of Precision, Appeal Process, & Continuing Education

–Round Robin G_{mm}

- IDOT Gmm – 2.496 Std. Dev. – 0.0044
- Contractors Gmm – 2.497 Std. Dev. – 0.0060
- Average Gmm – 2.496 Std. Dev. – 0.0057
- AMRL National Std. Dev Std. Dev. – 0.0061

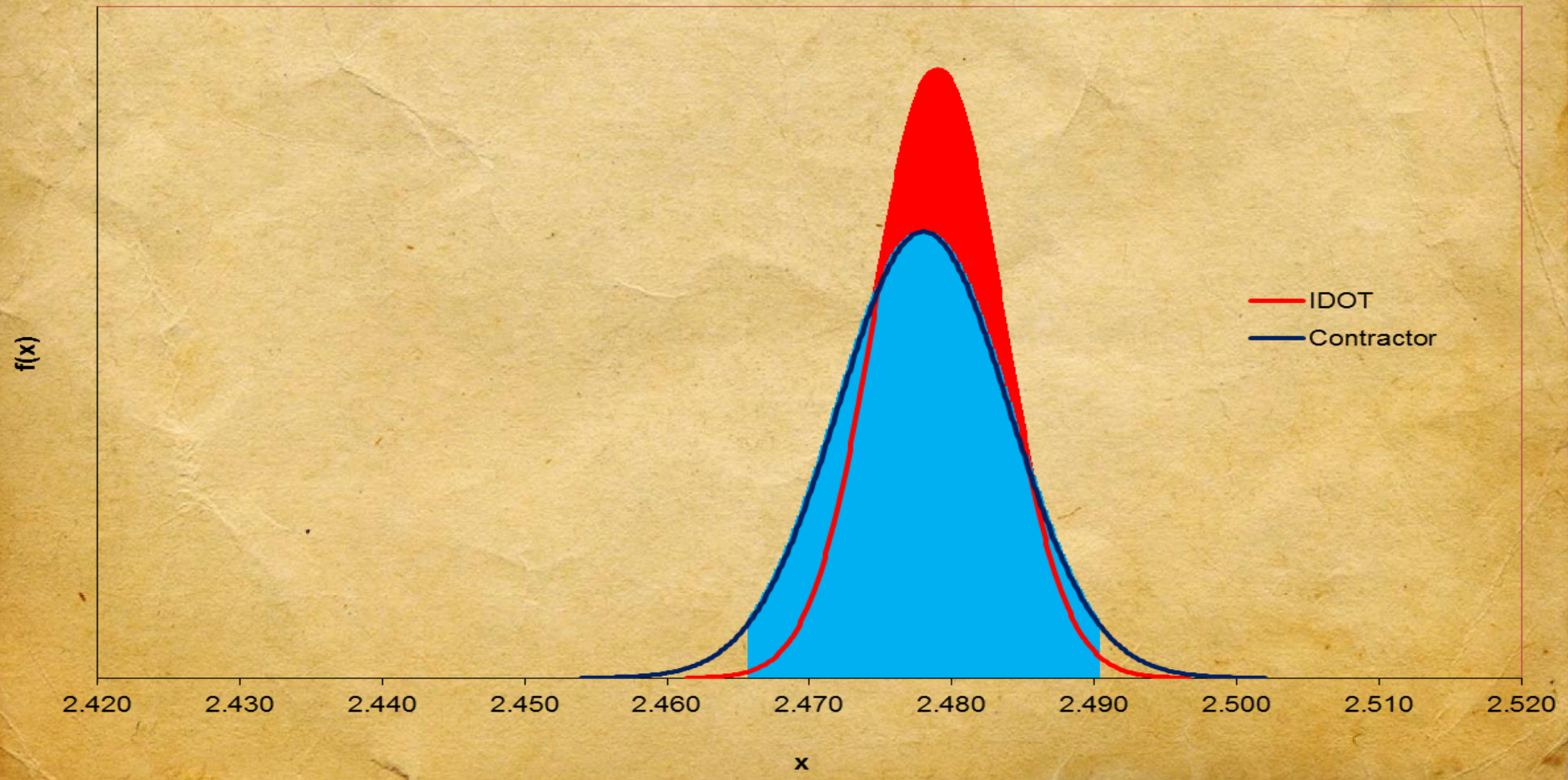
–Round Robin G_{mb}

- IDOT Gmm – 2.347 Std. Dev. – 0.0096
- Contractors Gmm – 2.338 Std. Dev. – 0.0143
- Average Gmm – 2.342 Std. Dev. – 0.0135
- AMRL National Std. Dev Std. Dev. – 0.0201

Limits of Precision, Appeal Process, & Continuing Education

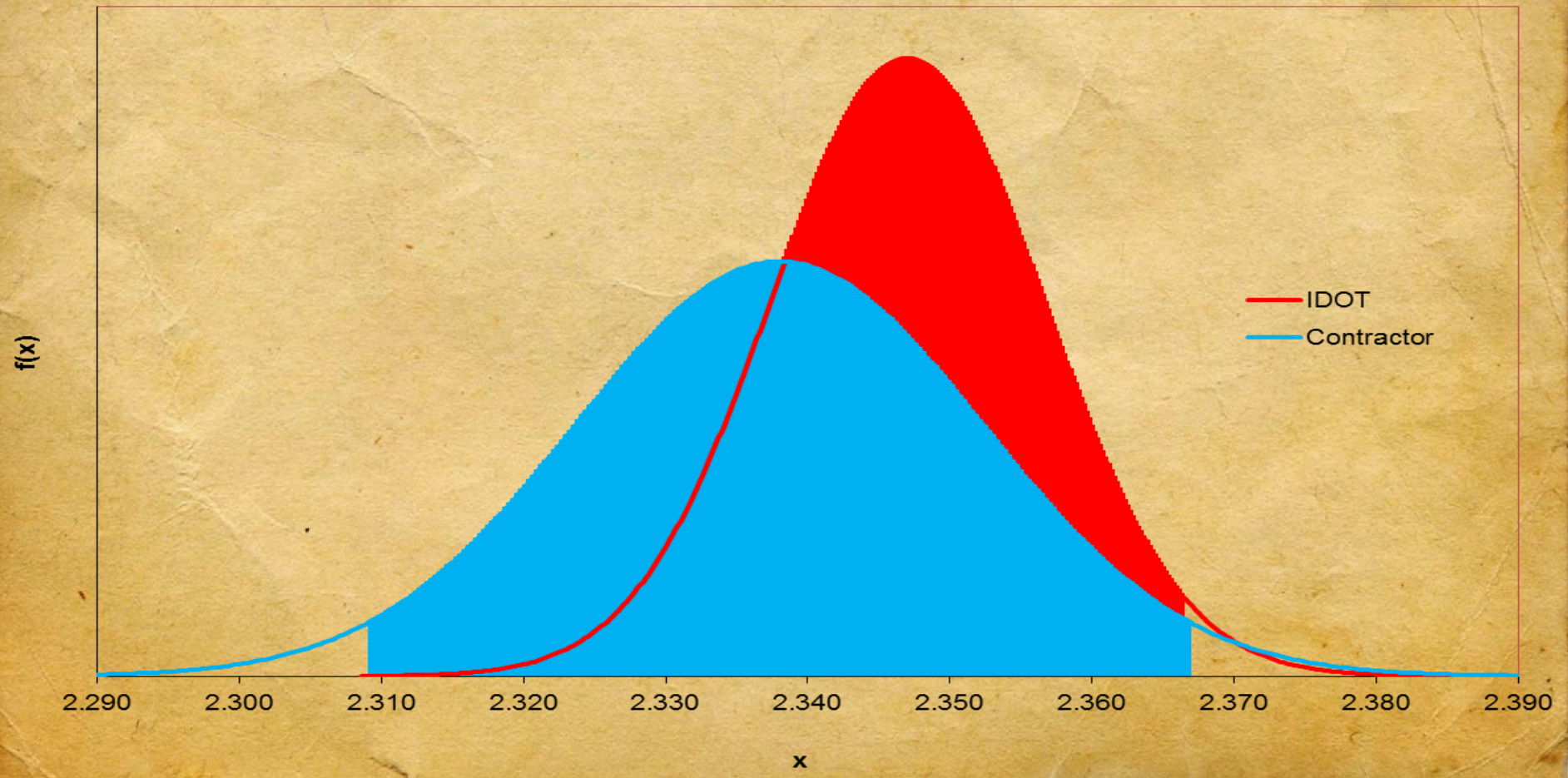
–Round Robin 2014

G_{mm} Offset – 0.001



Limits of Precision, Appeal Process, & Continuing Education

– Round Robin 2014 G_{mb} – Offset 0.009 / 0.4% Voids



Limits of Precision, Appeal Process, & Continuing Education

- Goal
  - Cut Standard Deviation & Offset in Half
    - Standardized Practices with IDOT
    - Continuing Round Robins
    - Bailey Method as a Tool
    - Research & Continued Discussions
    - Continued Education

IAPA Qc Managers Group - Accomplishments

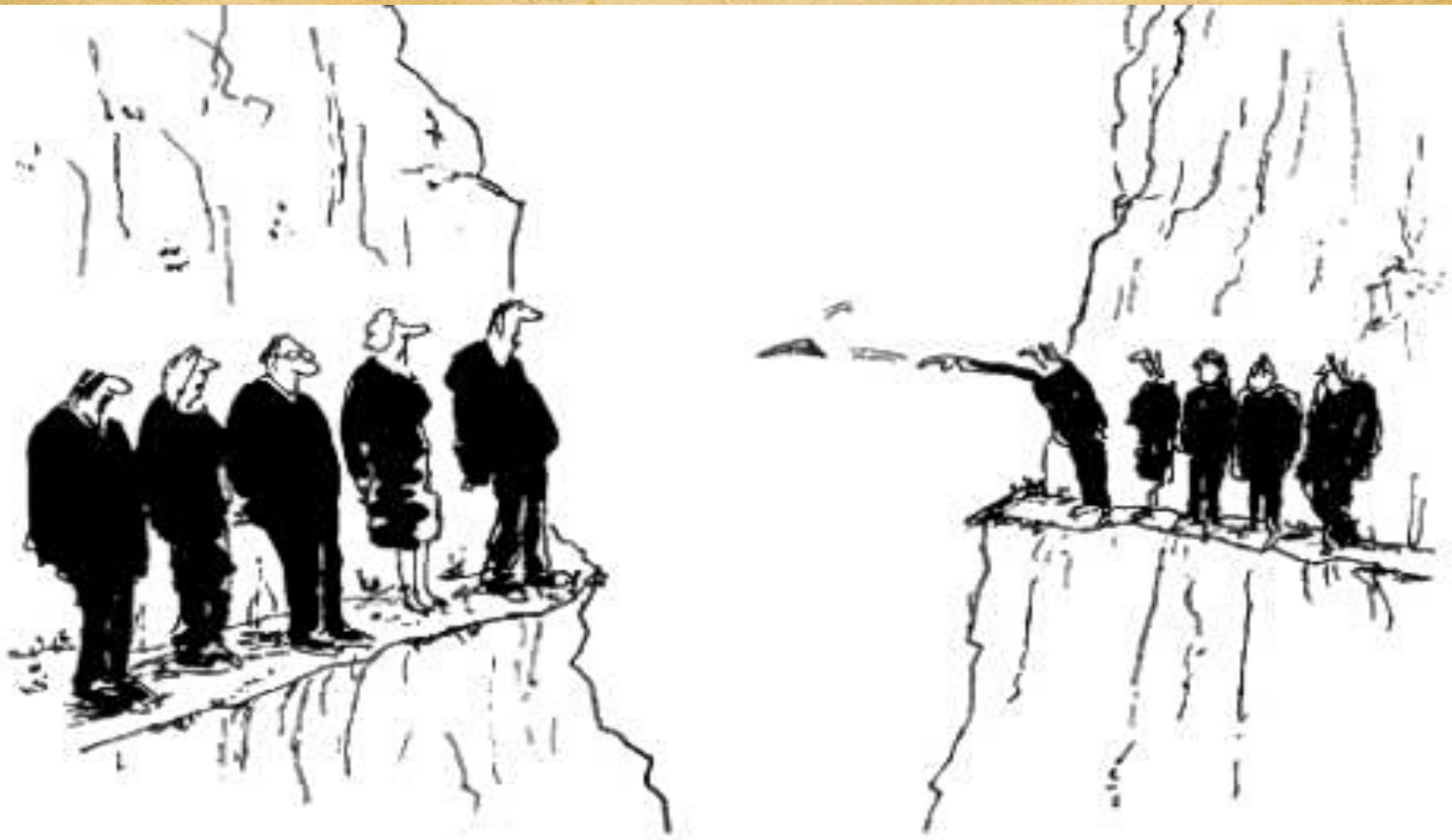
Reduction of Mix Designs

Positive Dust Control

Communication

- ABR / Design Committee
- Qc Software Committee
- MTD Low Ground Pressure
- Research Projects with ICT
- Face to Face Discussions with IDOT

IAPA Qc Managers Group - Accomplishments



IAPA Qc Managers Group

Thank You for Your Time

Open for Questions