
Profiler Certification Program
at the NCAT Pavement Test Track
National Center for Asphalt Technology
NCAT
at AUBURN UNIVERSITY
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Background

- Certification startup costs via ALDOT project
- Satisfy requirements for Quality Assurance
- Leverage cooperative Track investment
- Generic procedure for multi-state access
- Revision of ALDOT smoothness specification

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ALDOT Quality Assurance

- Annual certification at NCAT Pavement Test Track
- Verification procedure before 1st project use
  - Longitudinal check to within 1 foot in 528 feet
  - Vertical check to within 0.01 inches over 1 inch
  - IRI within 5% on 1 of 2 control sections in each Division
- Daily consistency check throughout project
  - IRI within 5% of measurement on previous day's run
  - No 2 profilers should differ by more than 10 percent

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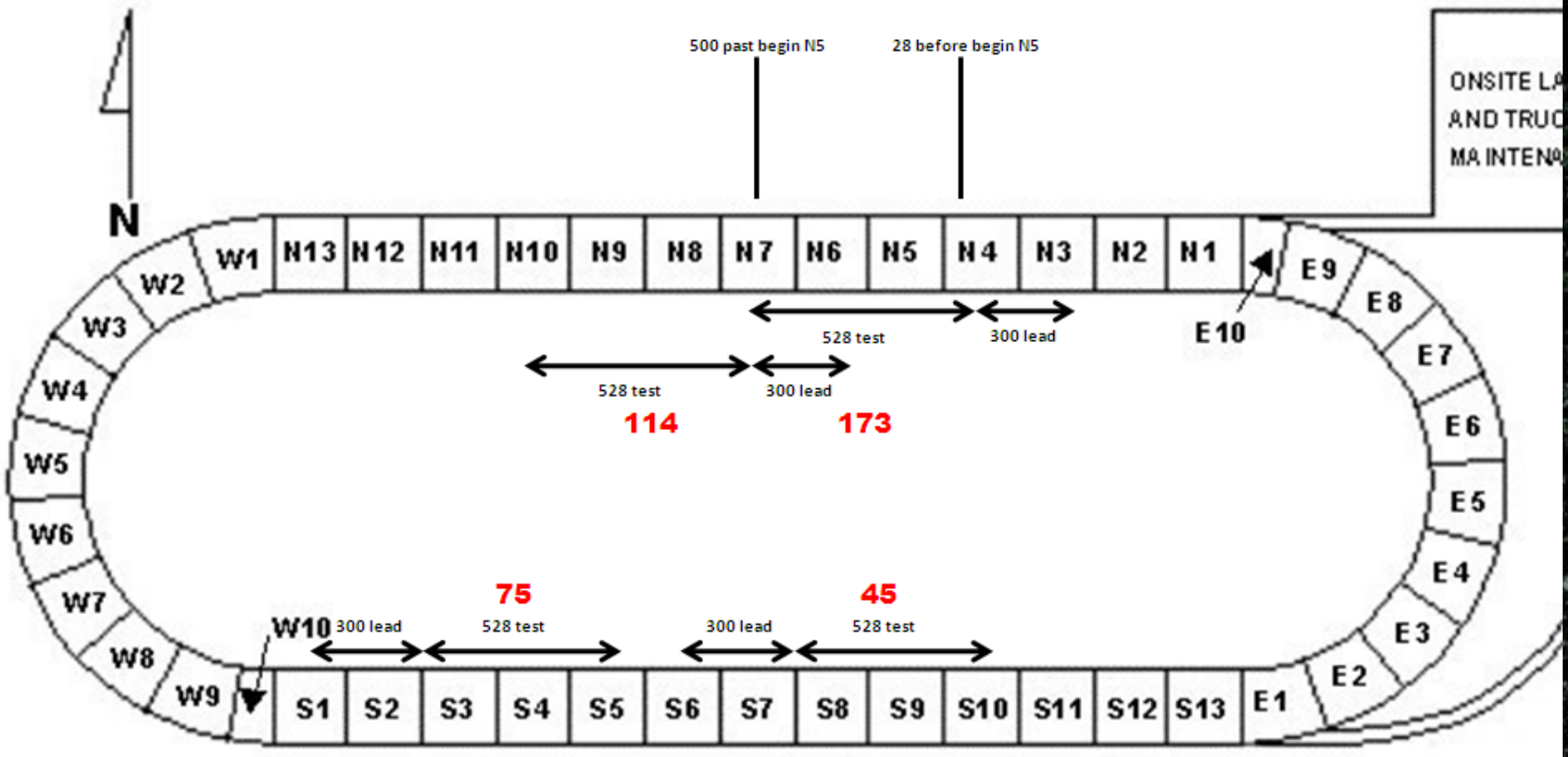
Profiler Certification Program

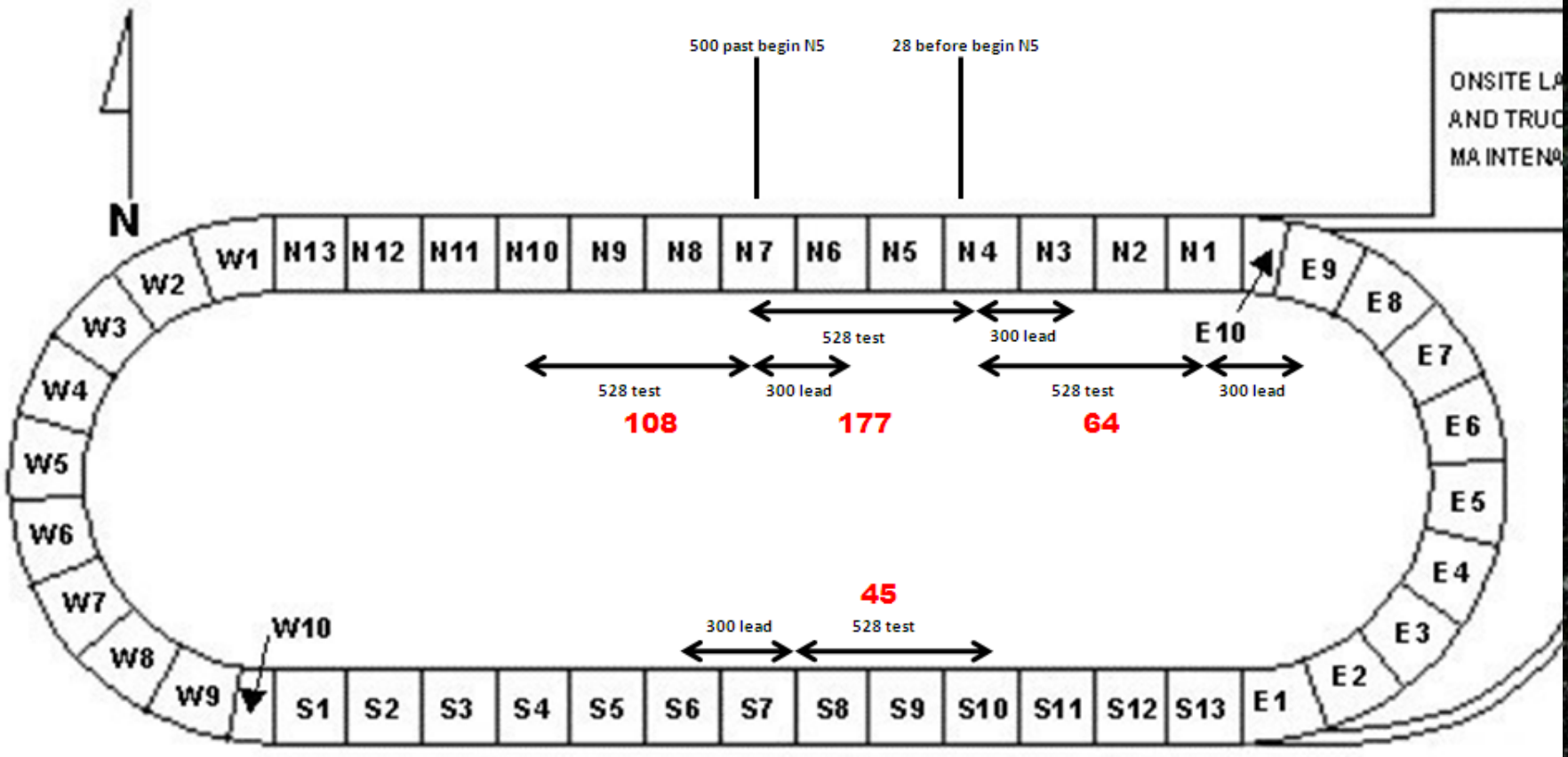
- Model numbers (hardware and software)
- Serial numbers (actual delivered units)
- Operators (technicians who run delivered units)

Proposed Certification Test Sections



Section Number	Surface Type	Desired Avg IRI Range	Proposed Location on NCAT Track	Actual Avg IRI	Comments
1	Dense	30 to 75	Begin S3	75	Only 3 segements with IRI > 120
2	Dense	95 to 135	500 ft past begin N5	114	Only six 25 ft segments with IRI > 135
3	Dense	Approaching 200	28 ft before Begin N5	173	Directly before/adjacent to section #2
4	PFC	30 to 75	Begin S8	45	Smoothest 528 ft section on inside lane

Tentative Certification Test Sections



Section Number	Surface Type	Desired Avg IRI Range	Proposed Location on NCAT Track	Actual Avg IRI	Comments
1	Dense	30 to 75	Near Begin N2	64	Right wheelpath corrections required
2	Dense	95 to 135	500 ft past begin N5	108	Only six 25 ft segments with IRI > 135
3	Dense	Approaching 200	28 ft before Begin N5	177	Directly before/adjacent to section #2
4	PFC	30 to 75	Begin S8	45	Smoothest 528 ft section on inside lane

Smooth Dense Section

- Satisfied with 64 inches per mile
- Not satisfied with repeatability difficulty
- 4.75 mm NMAS thin overlay during rebuild
- 57 inches per mile on new overlay

Inertial Profiler

- Must produce & store inertial profiles (ProVAL)
- 65 to 71 inch spacing on dual wheelpath units
- Output IRI summarized for 0.1 mile section lengths
- Field calibration/verification for distance & height
- Model and unit of test system must be certified
- Maintained in good repair and within specifications

Test Procedure

- Major adjustments requiring recertification
  - Repair or replacement of accelerometer(s)
  - Repair or replacement of height sensor(s)
  - Repair or replacement of printed circuit boards
  - “Foundational” software parameters and scale factors

Test Procedure

- Minor adjustments not requiring recertification
  - Inspecting, resoldering or replacing connectors
  - Cleaning components or making voltage adjustments
  - “Non-foundational” parameters and scale factors

Certification

- Slow (≤ 25 mph) and/or high (≥ 45 mph) speed
- Dense and/or open graded surfaces
- Distance measuring device accurate to within 0.15%
- ProVAL default values for accuracy & repeatability
- Date of certification shown on certificate
  - Recertification interval determined by state DOTs
- Very little restriction on Track access
- Need for smooth and textured concrete…

Certification

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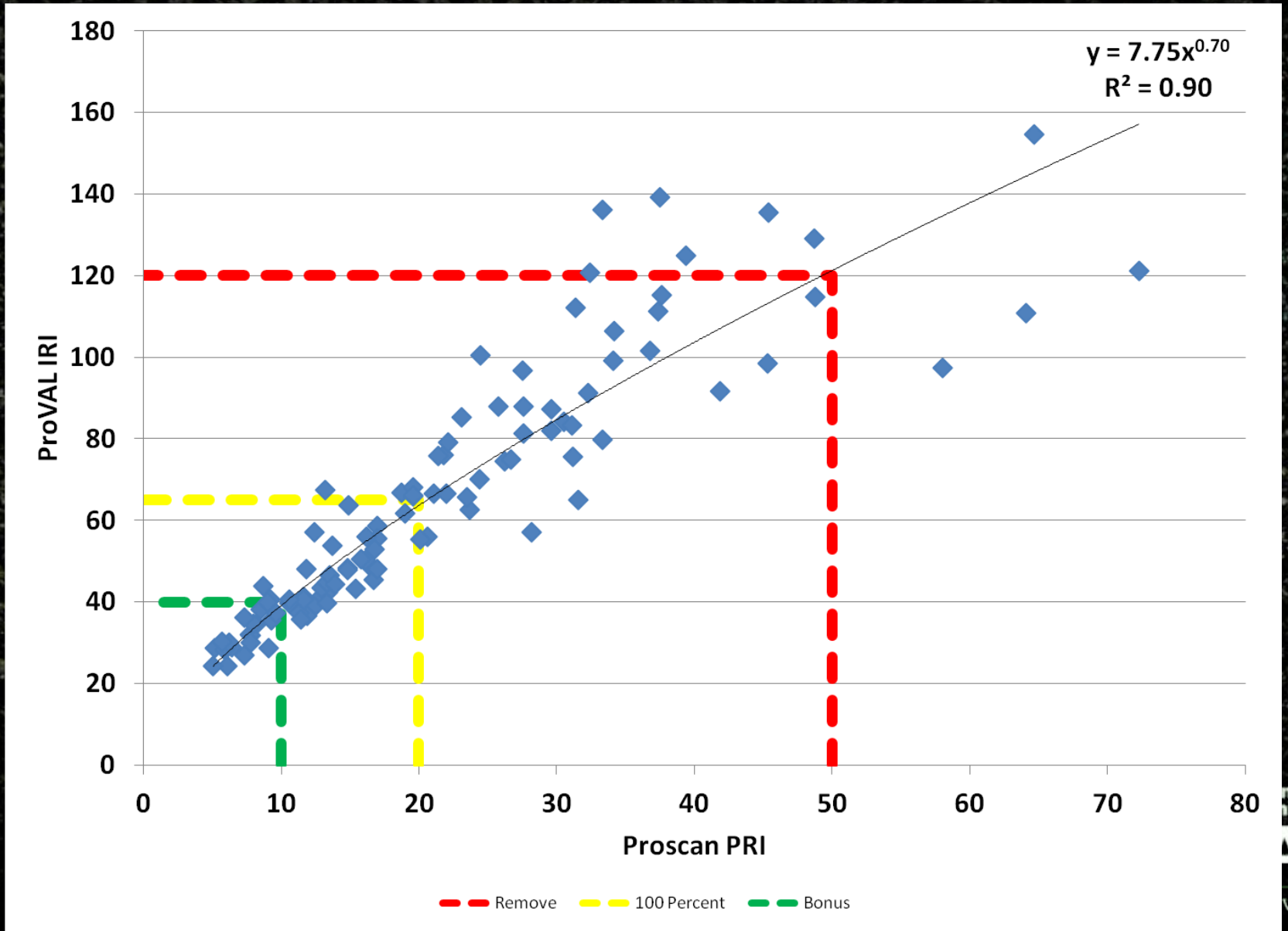
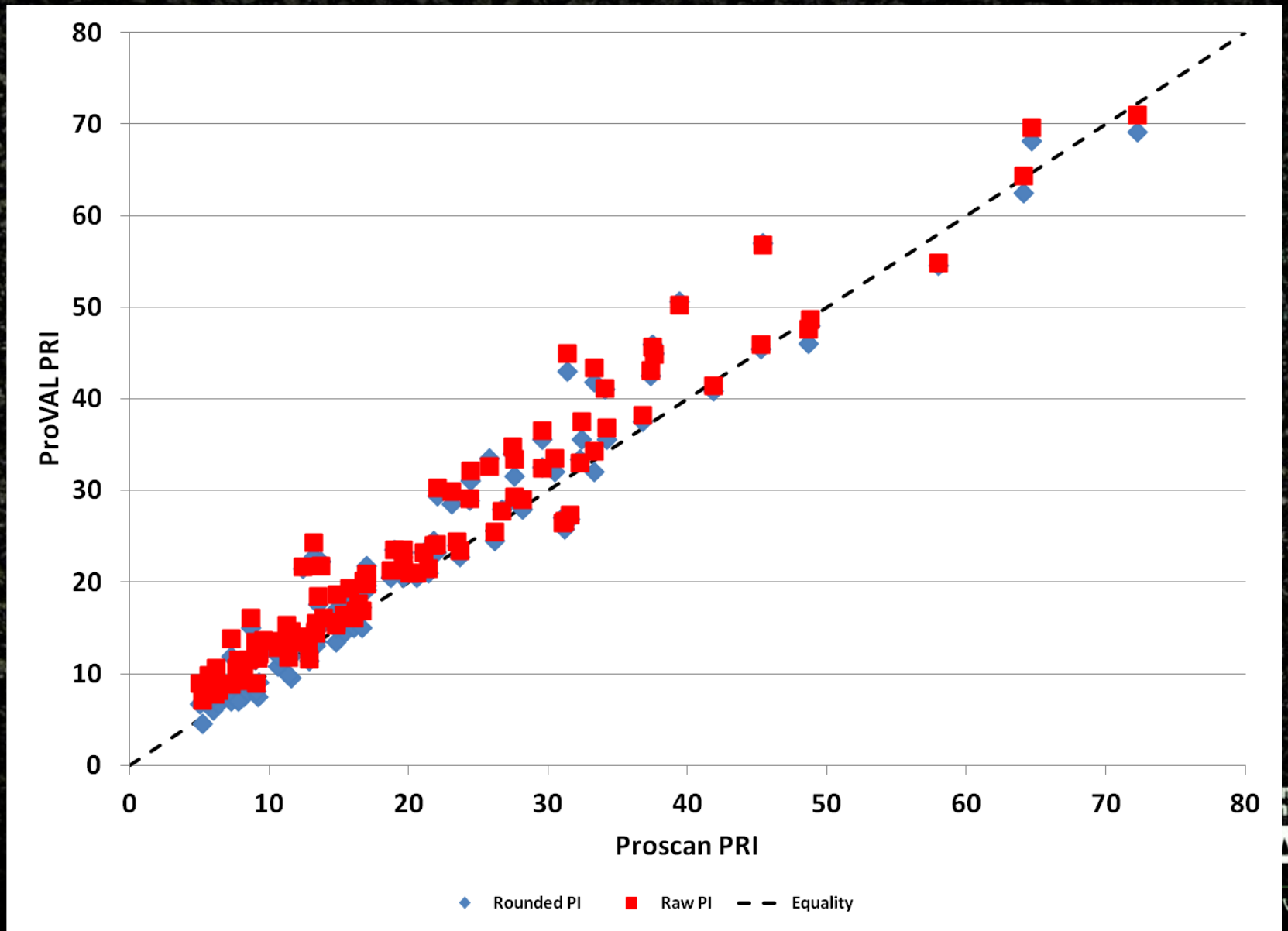
ALDOT Specification Conversion



Pipeline Projects



4 Step Implementation Process

- Simple conversion of existing specification

- Implement testing each lift of buildup
- Add testing before and after construction
- Expand scope for improvement opportunity

Questions ?

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