COMPARATIVE EVALUATION OF FWD AND BENKELMAN BEAM DEFLECTIONS IN SASKATCHEWAN



- Replacement with Falling Weight Deflectometer
- Years of Benkelman Beam data collected want to utilize
- Require field investigation to determine correlation(s)



THE STUDY

- Eight sites chosen by SMHI 7 GBC, 1 soil cement
- Three rounds of deflection tests: "Spring" "Summer" and "Fall"
- Benkelman Beam Testing (SMHI)
- FWD (EBA)

Layer Legend

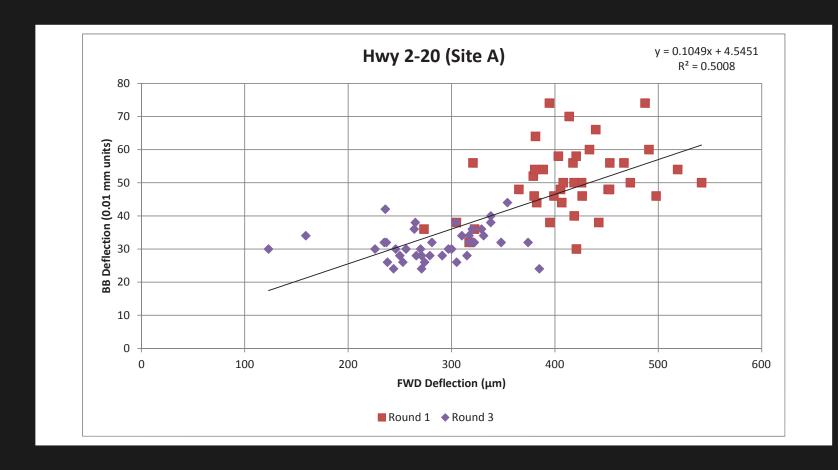
— ACP Overlay

— ACP/Base Interface

— Base Interface

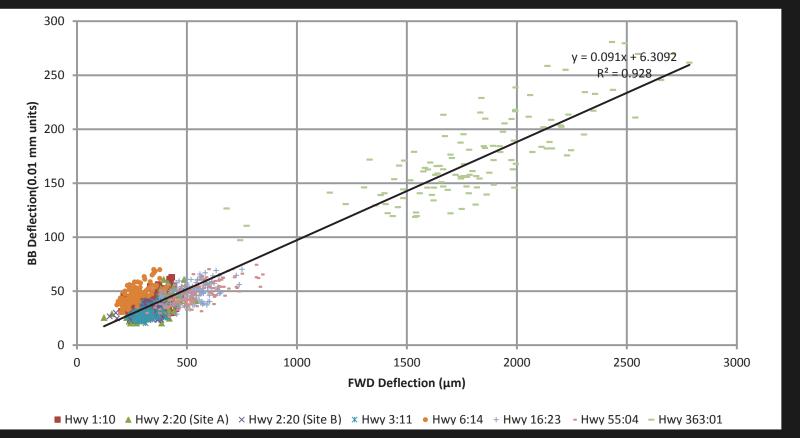
Geotechnical Investigation (EBA) including Coring

- Subgrade Sampling/ characterization
- RoadRadar™ (ground penetrating radar) Investigation



THE RESULTS

- Almost 900 data points
- Point-by-point correlations are poor within individual sites



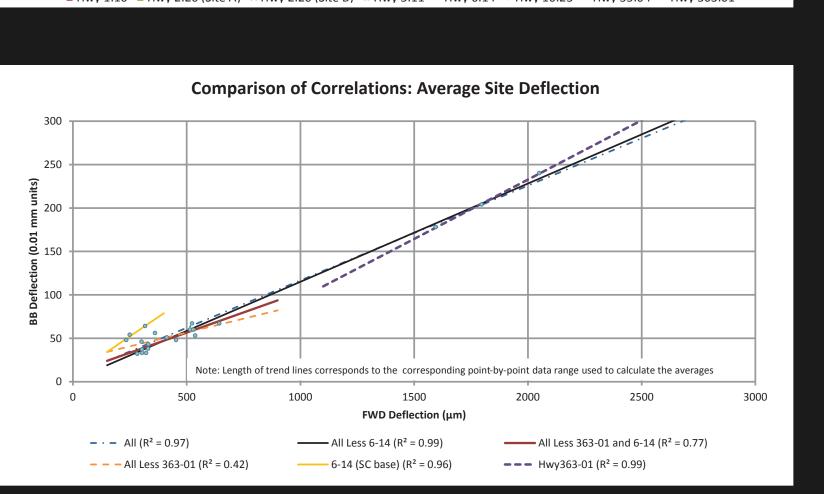
Two equations were developed based on

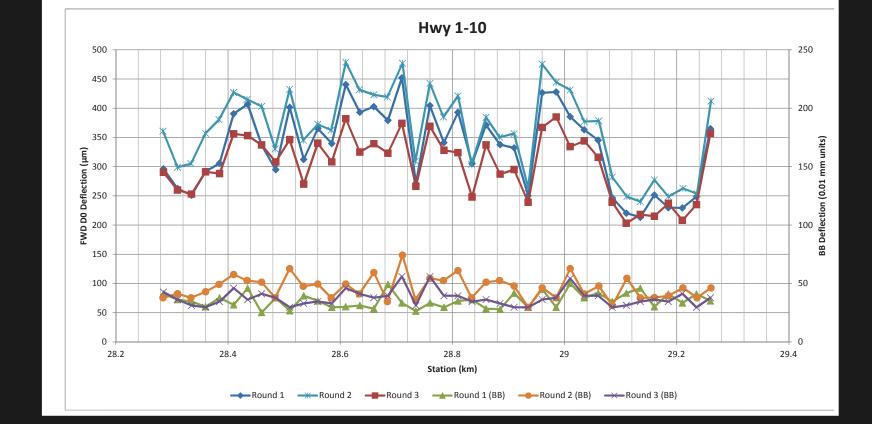
• For Soil Cement: BB = FWD * 1.787 + 74.9

BB = FWD * 1.131 + 19.2

• For Granular Base:

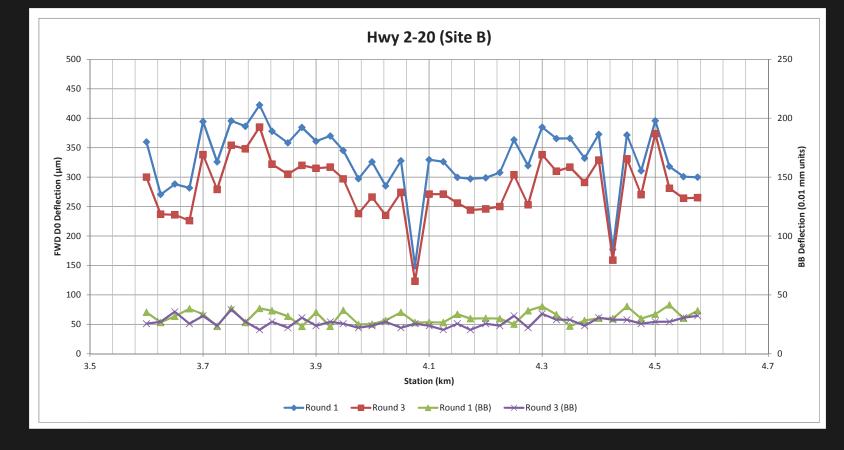






THE EXTRAS

FWD shows good repeatability.
 Also appears more sensitive to local variations in deflection



 FWD seasonal variations clear... less so with BB









