



Kansas Traffic Speed Deflectometer (and more) Experimental Findings

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Pooled Fund Involvement

- Kansas is proud to be part of the TSD pooled fund effort.
 - Provides the ability to collect TSD data in many situations
 - Provides for some coordination of data analysis
 - Provides for some coordination of findings
- A couple observations/questions
 - Collect data and look at it.
 - How good does it need to be to help us understand our pavements?
 - What do we need in terms of verification/calibration?
- What have we done; what have we learned?

I-70 TSD collection
~500 miles
July/August 2018



Eastern Kansas
TSD collection
~300 miles
November/December 2018

The Experiment(s)

- I-70 TSD collection
 - 500 miles of data
 - Collected Late June 2018
- Eastern Kansas TSD Collection
 - 312 miles of data
 - Collected Mid November 2018
 - Through Pooled Fund

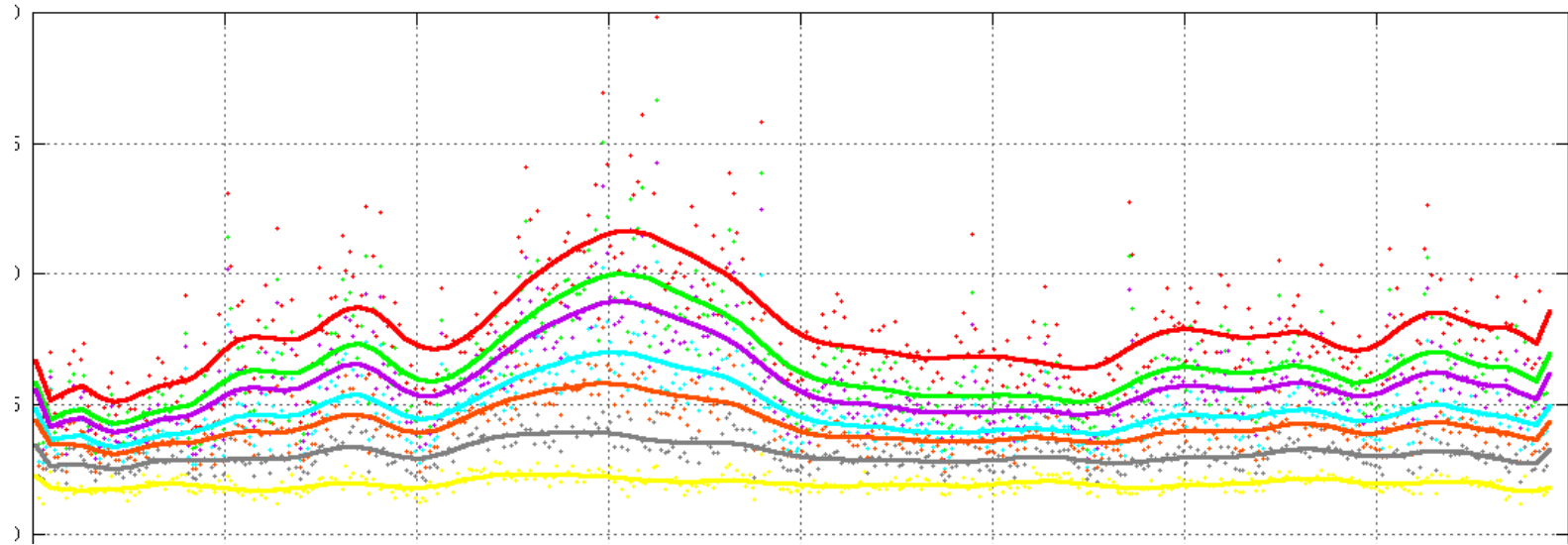


Data, Data everywhere....

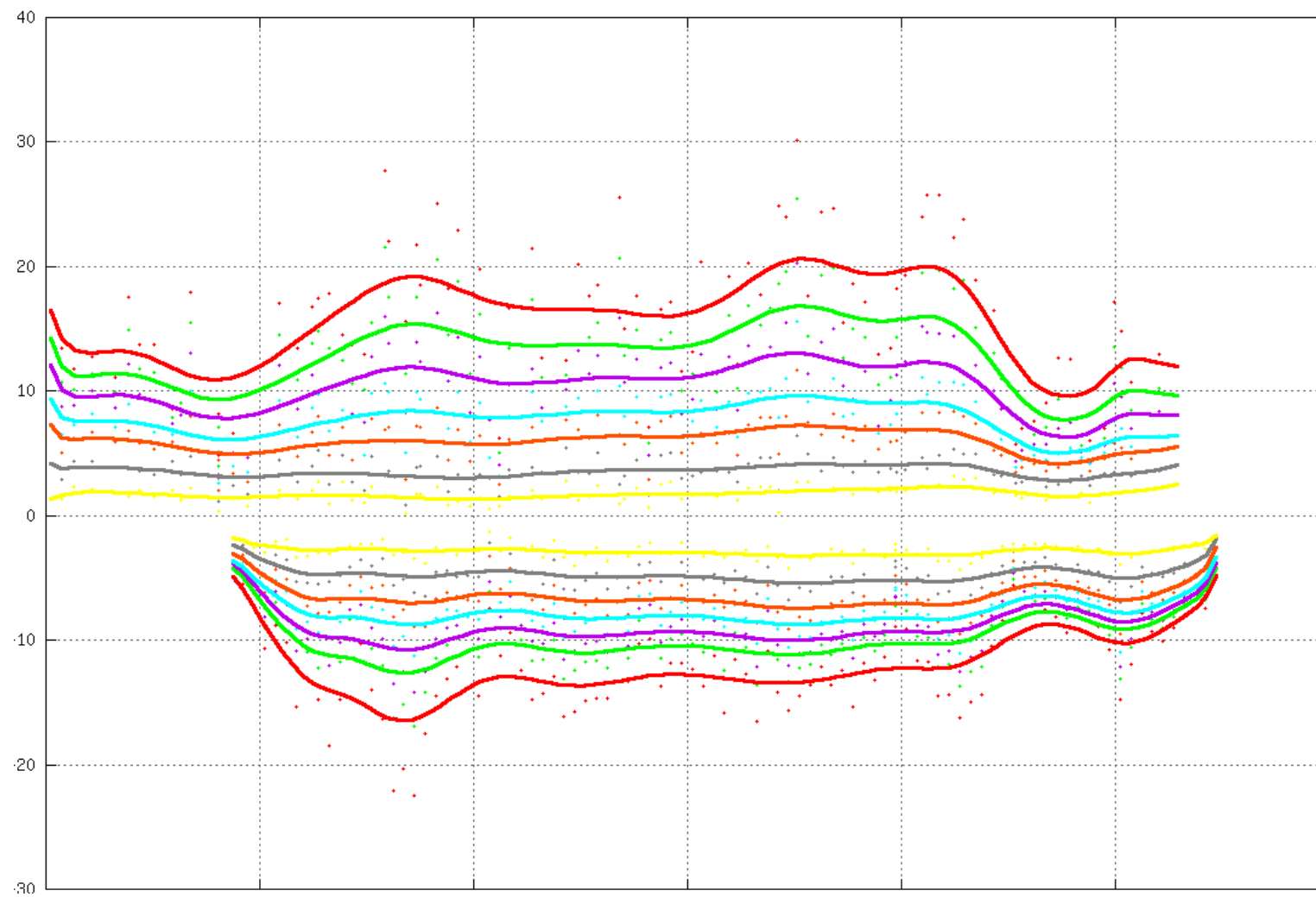
- How to compare TSD and FWD
- What are we learning from these comparisons
- What questions have we answered
- What questions have we produced



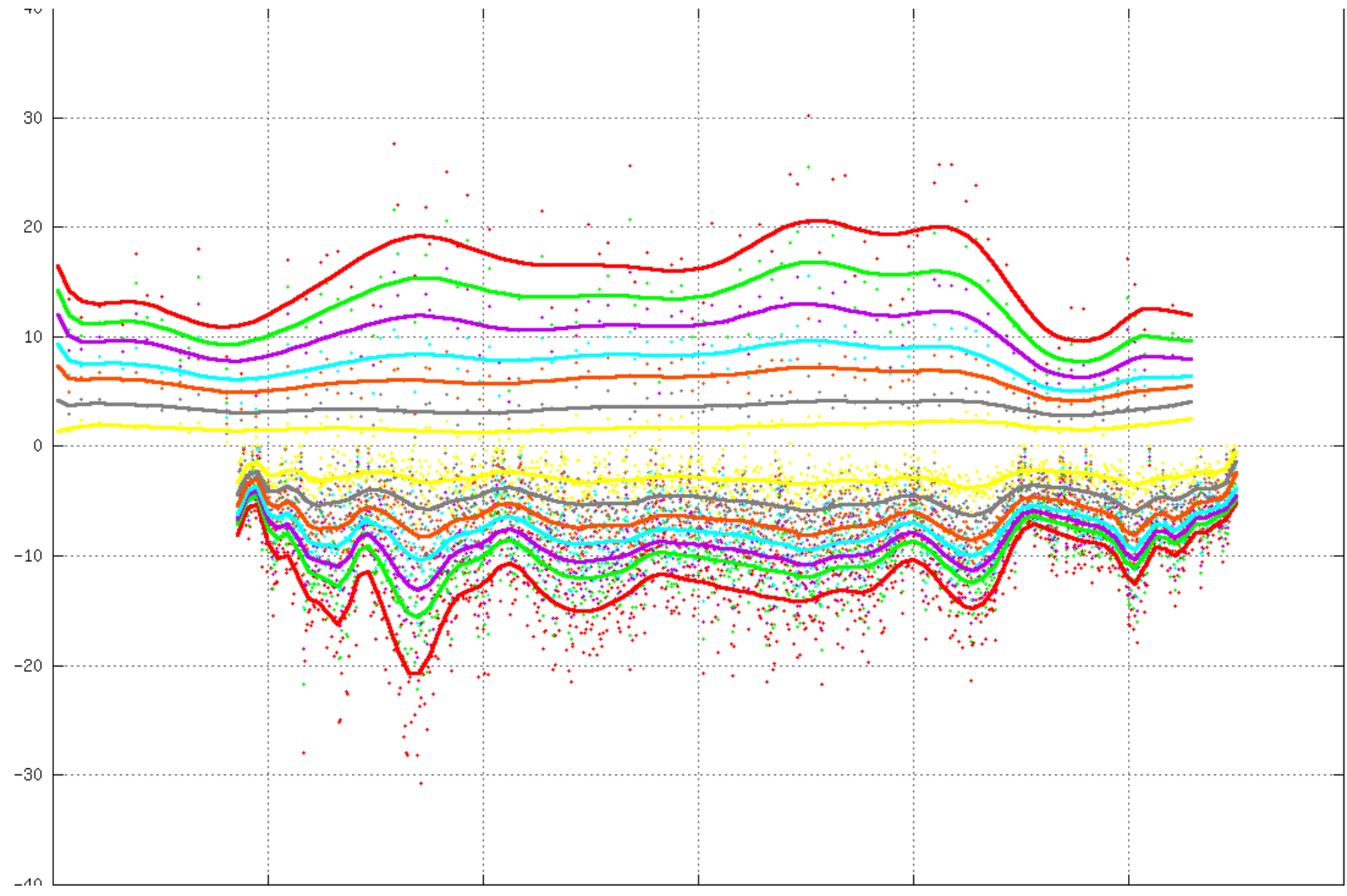
How to Compare TSD and FWD Sample Graph



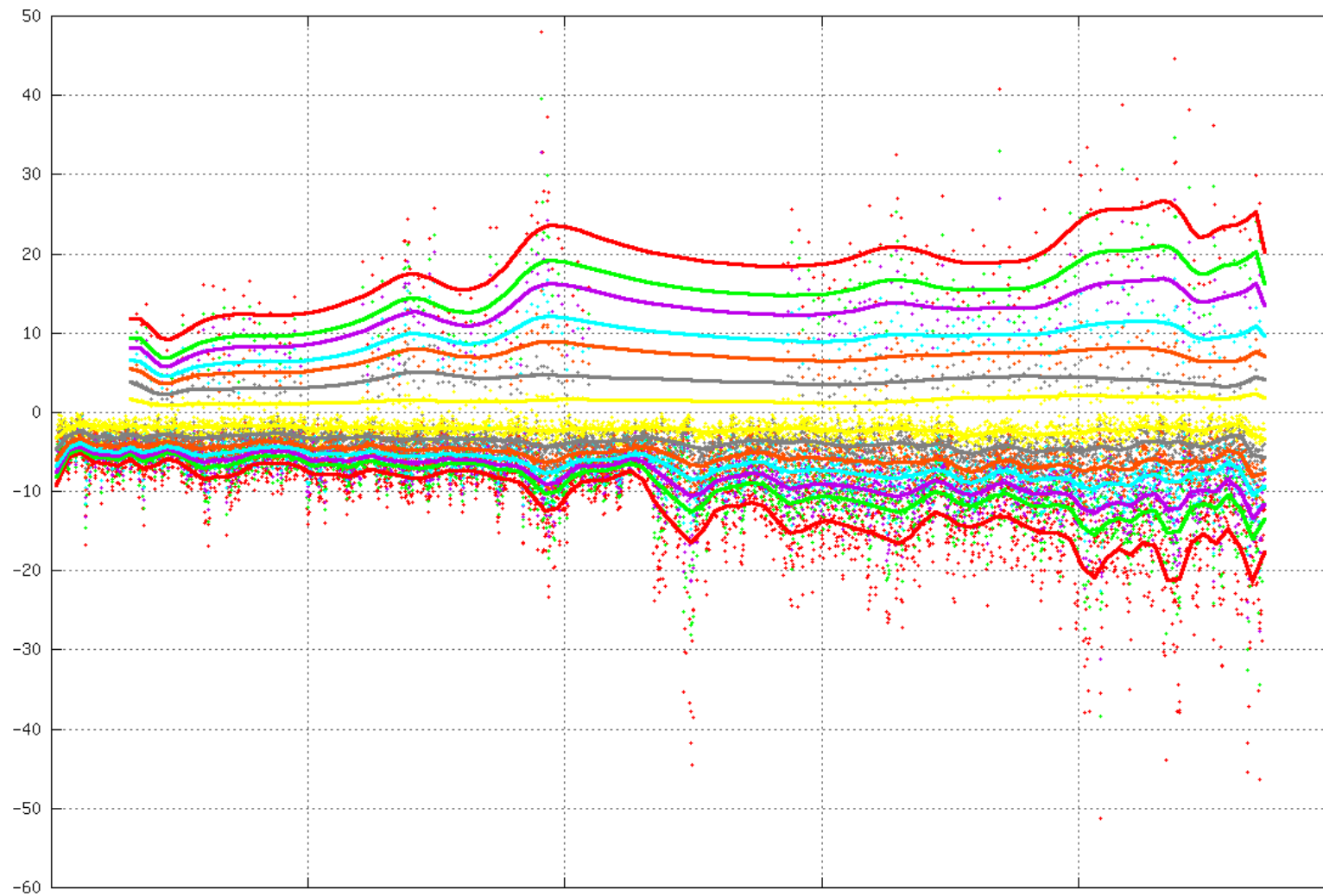
Compare FWD/TSD on K-99



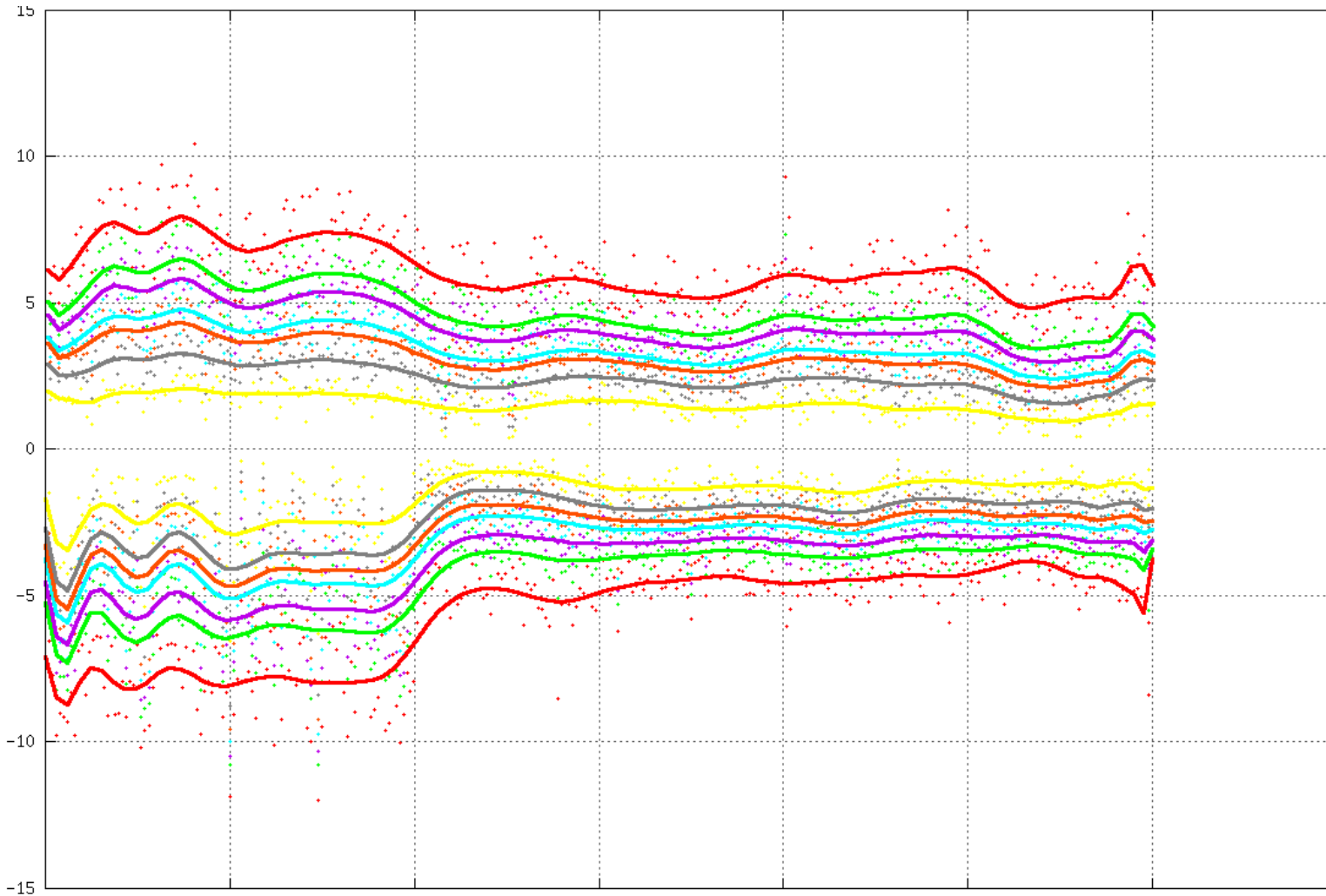
TSD summaries are at higher resolution



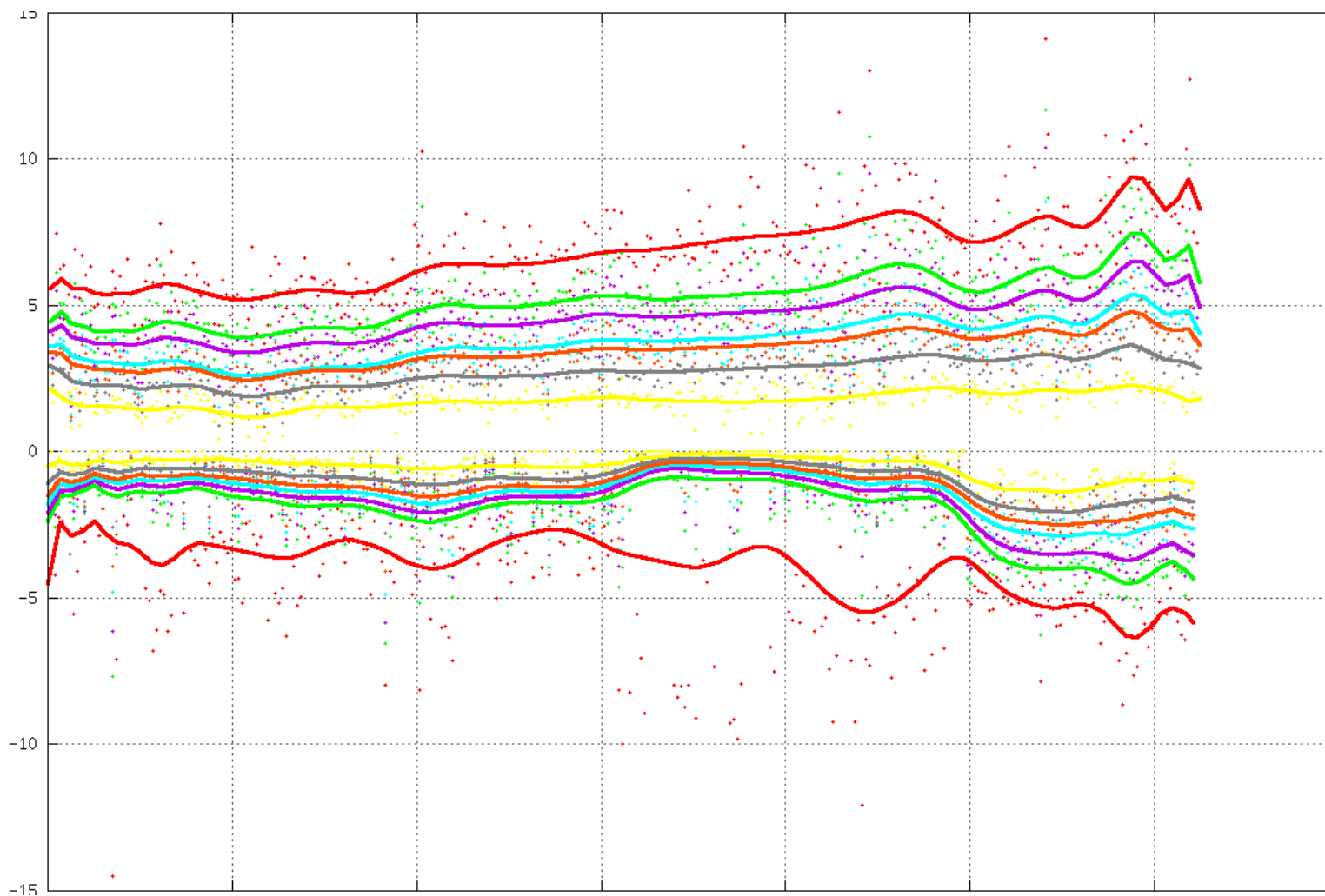
Before/After and Between



An I-70 FWD – TSD nice comparison



But then we found this....



026 | 70 EB 6/28/2018 left 10/10/2018 right

Kansas 2018 - Road ID: 0070E Interstate 70 Eastbound Forward 172.554mi L0 [Front Center]
Lat/Lon: 38.86234, -99.07898



Collected: 28 Jun, 2018

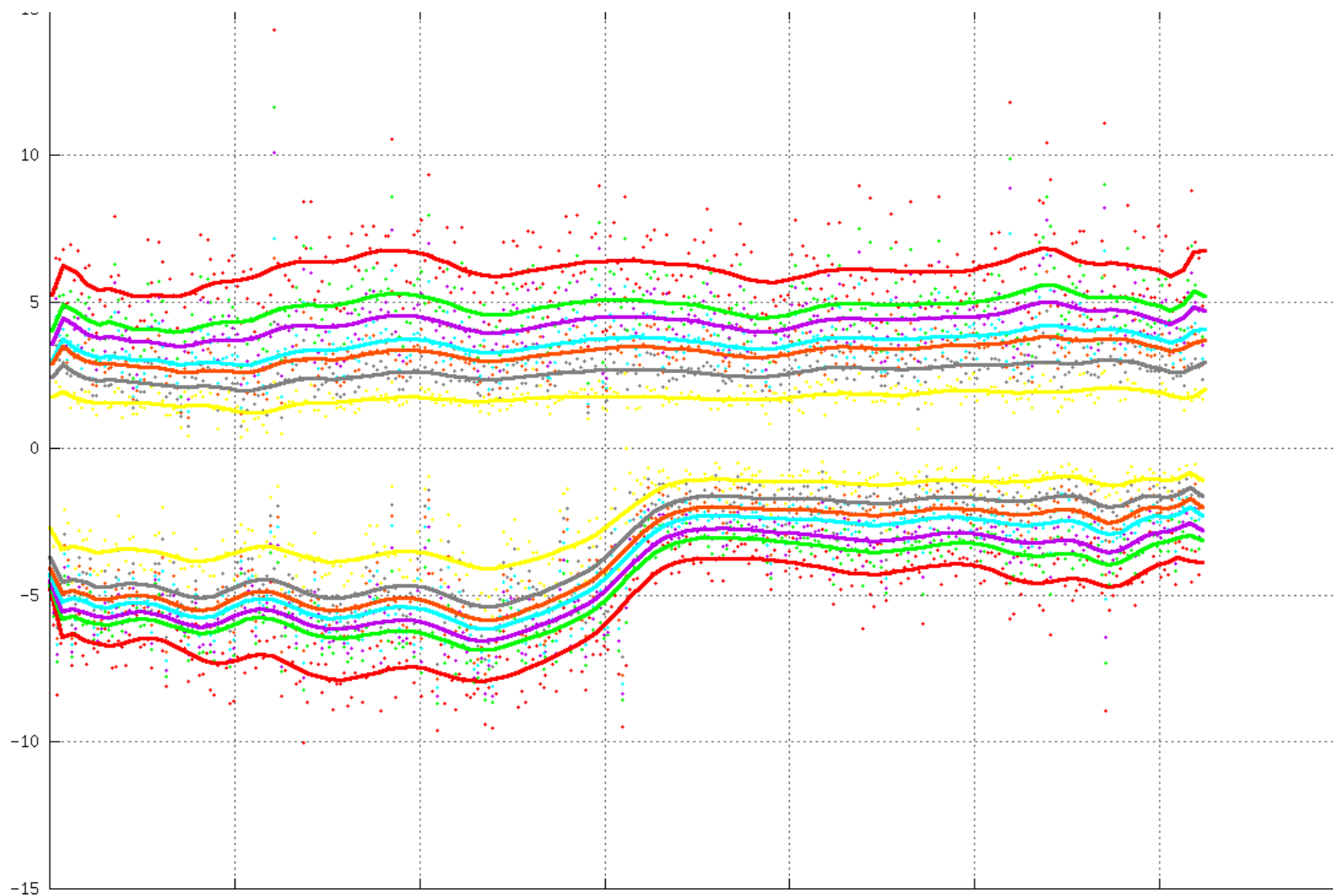
hawkeye:614627447204219:172.554



026 | 70 WB 6/28/2018 left 10/10/2018 right

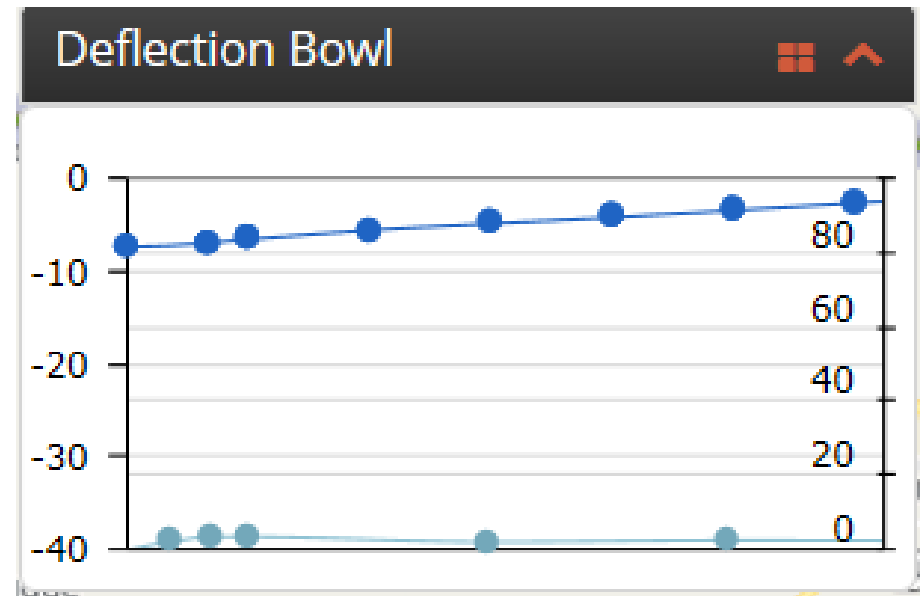
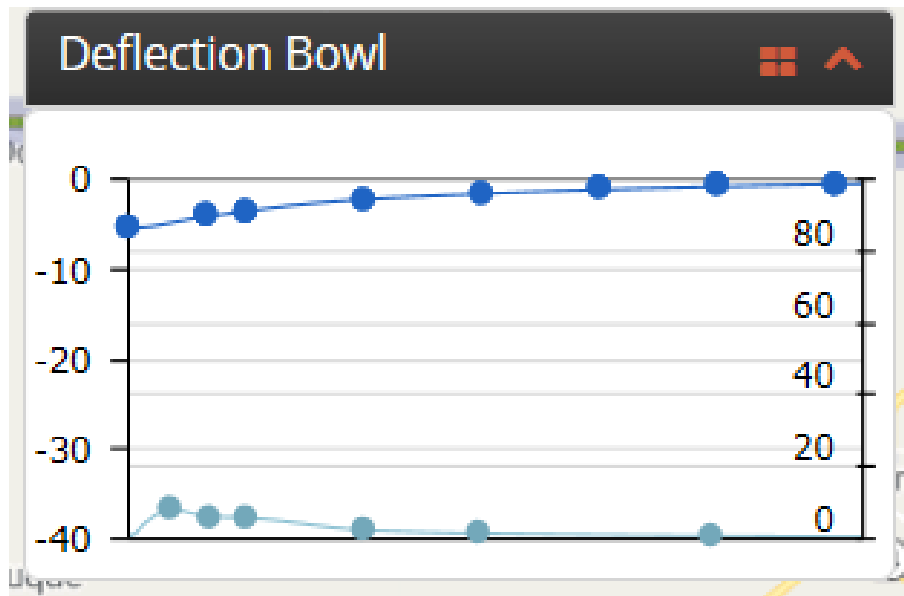


Well.... Not what I was looking for.

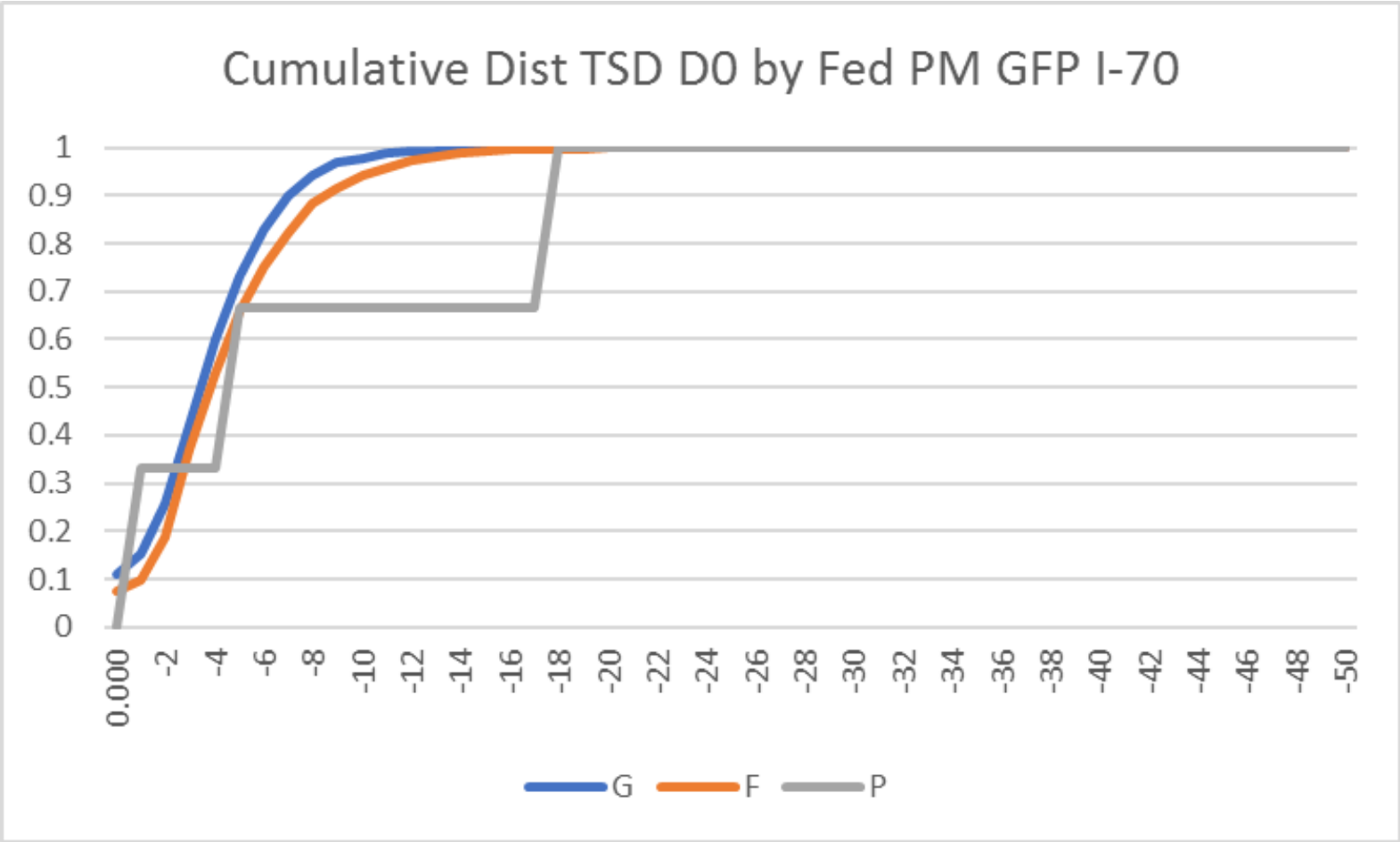


From FWD and TSD to something fun

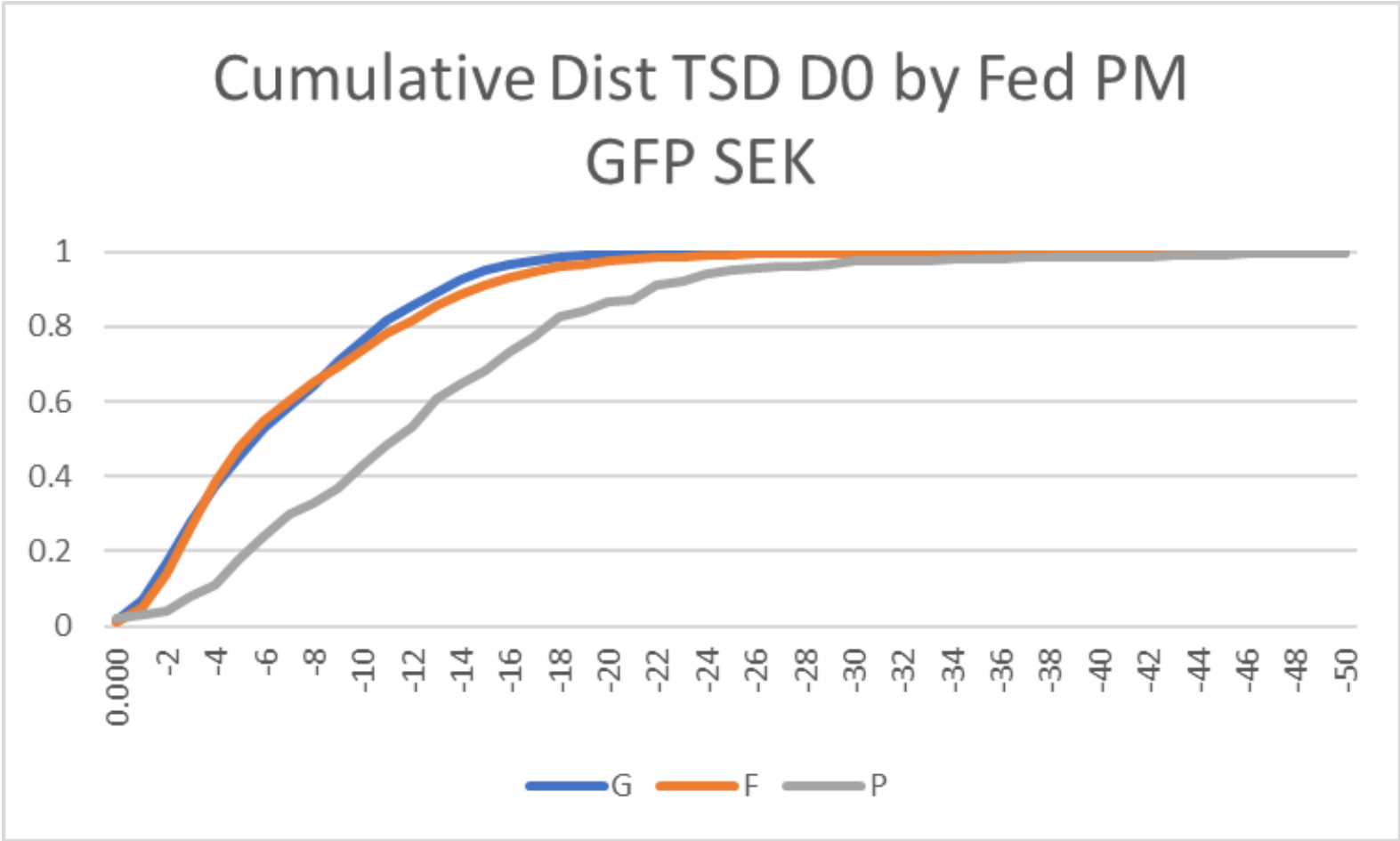
- Asphalt Bridges
- Bridge Deflection



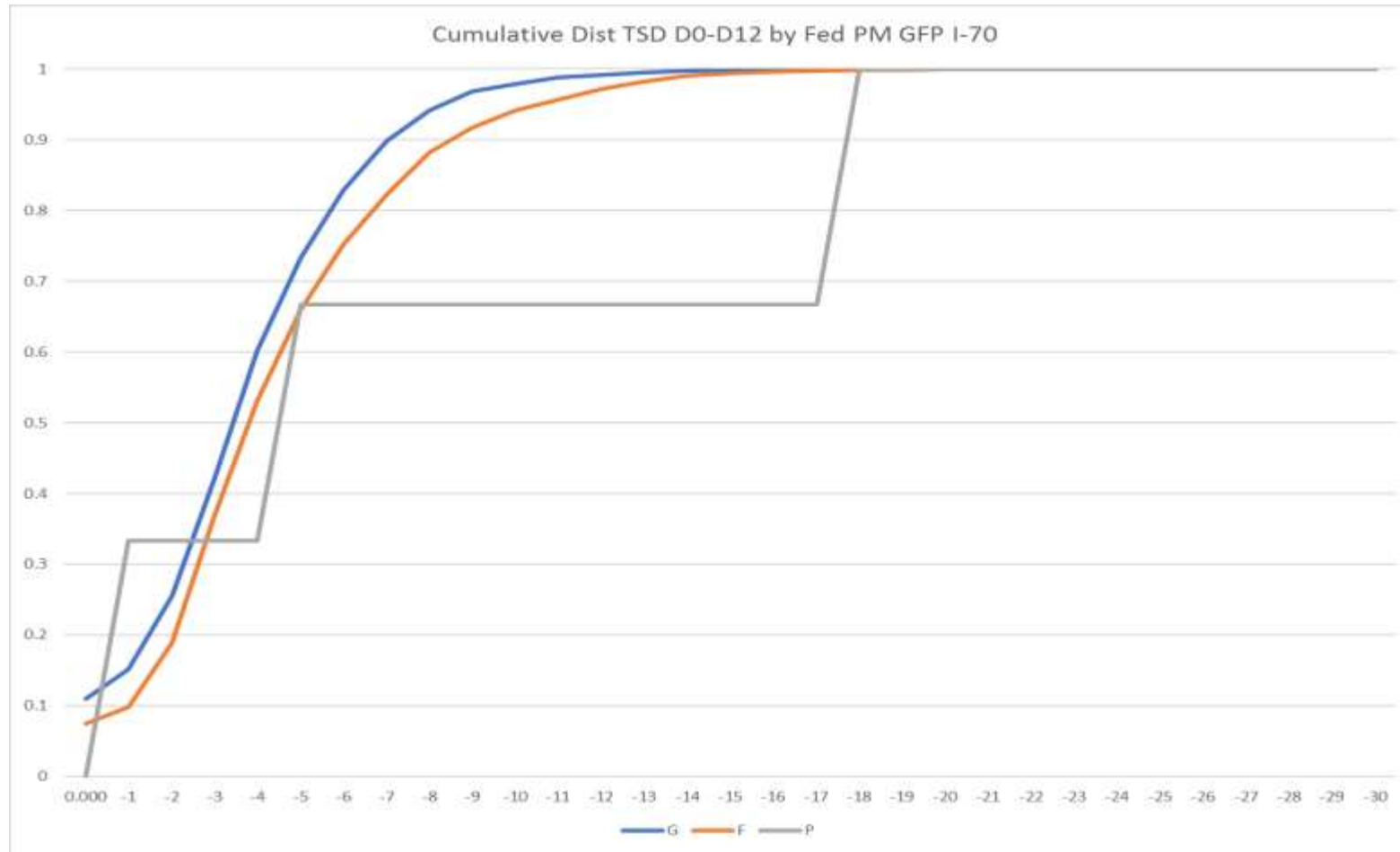
Deflection vs Federal GoodFairPoor I-70 D0



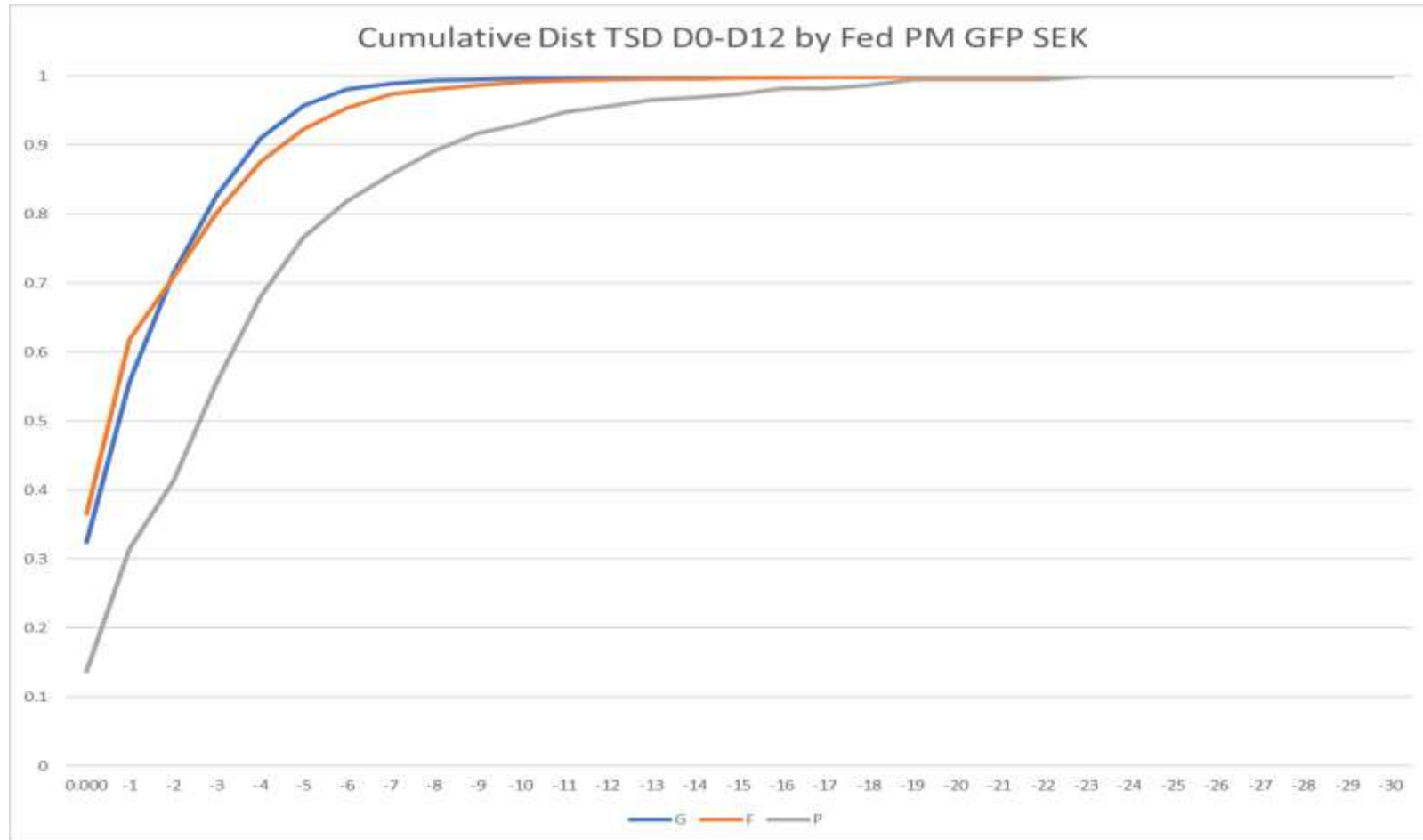
Deflection vs Federal GoodFairPoor SEK D0



Deflection vs Federal GFP I-70 D0-D12



Deflection vs Federal GFP SEK D0-D12



Wrapping up

- TSD and FWD are fun to compare
 - Frequently they give similar results, but we still need to learn about differences
- TSDs can tell us about subsurface conditions like sink holes and undermining
- We have a long way to go comparing pavement surface data and TSD data
- I didn't talk at all about Concrete Pavements, but we think the TSD can yield some interesting data their too
- We didn't answer many questions, but hopefully we have better new questions