



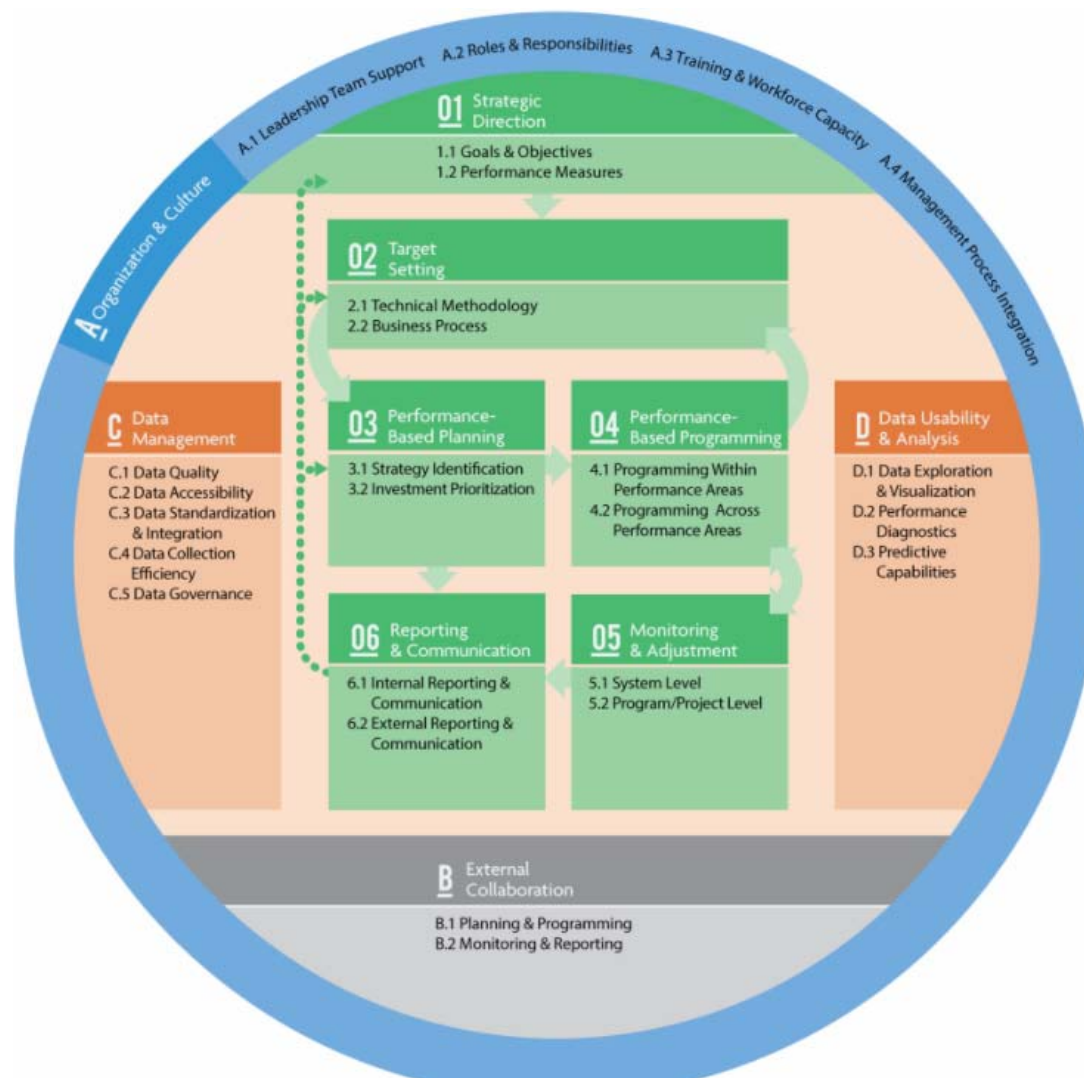
Pavement Performance Measures: Reporting Versus Decision Making

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this presentation will address:

- Performance management concept
- Performance measures used for decision making
- Performance measures used for reporting
- Example gap analysis
- Insights and remaining questions



<https://www.tpmtools.org/>

Performance Management Concept



<https://www.fhwa.dot.gov/tpm/resources/training.cfm>

- Measures used for planning investments
- Measures used for reporting investment benefits



Management Performance Measures

- Network-Level Decisions
 - Overall/combined condition indices
 - e.g. Pavement Quality Index (PQI), Pavement Condition Index (PCI), etc.
 - Used for planning and budget allocation
- Project-Level Decisions
 - Individual performance measures
 - e.g. rut depth, transverse cracking, faulting, fatigue, etc.
 - Used for selecting specific treatments



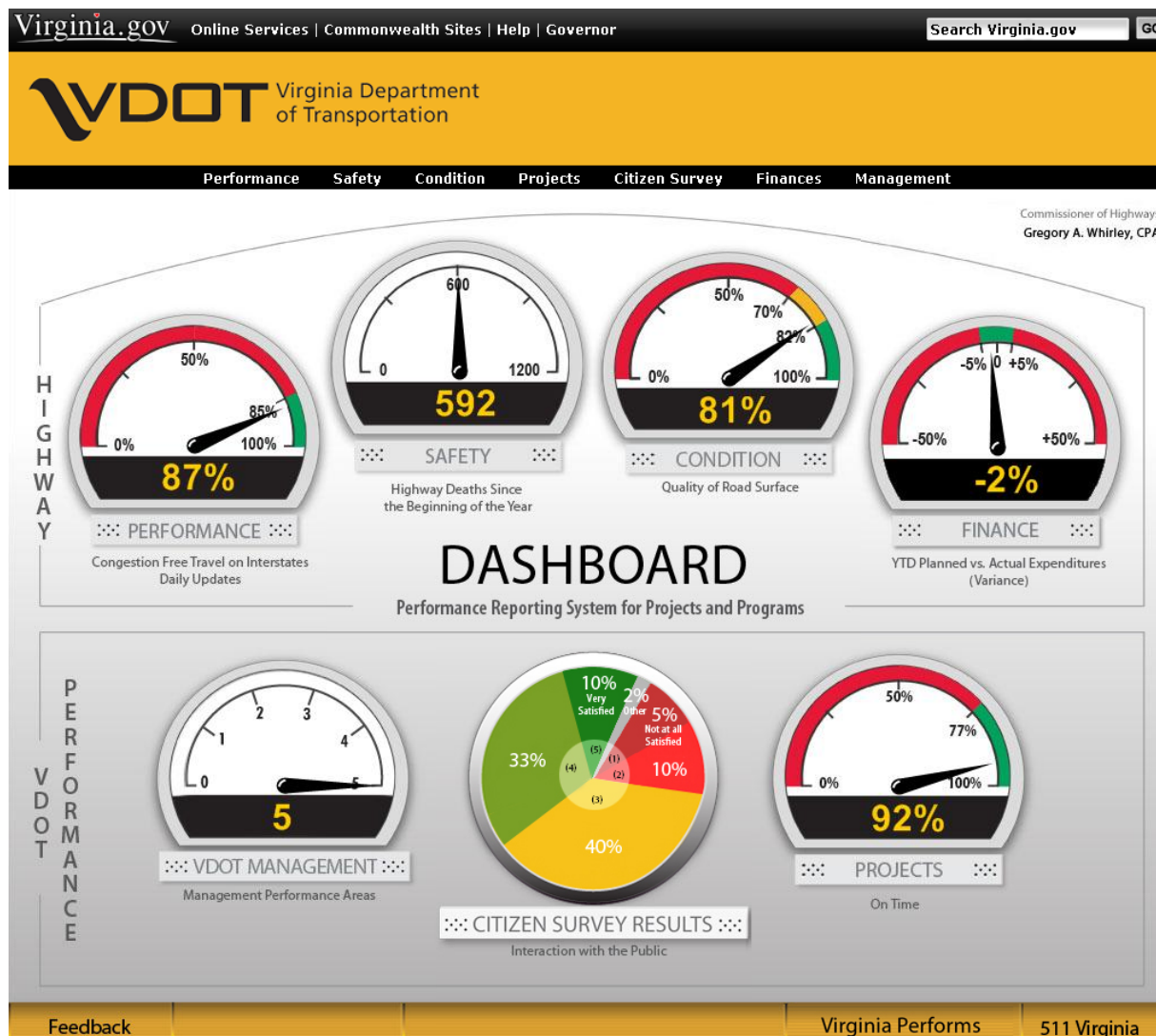
Reporting Performance Measures

Reports → Communication → Funds

- Tie asset management analysis results to funding
 - Data-driven, performance-based, defensible
 - Feedback & evaluation of asset management processes
- Transparency, e.g. dashboards
- Accountability, e.g. HPMS Reporting



Example: Virginia DOT Dashboard



<http://dashboard.virginiadot.org/>



Federal HPMS Reporting Measures

Rating	Good	Fair	Poor
IRI <i>(inches/mile)</i>	<95	95-170	>170
PSR* <i>(0.0-5.0 value)</i>	≥ 4.0	2.0-4.0	≤ 2.0
Cracking Percent <i>(%)</i>	<5	<i>CRCP: 5-10</i> <i>Jointed: 5-15</i> <i>Asphalt: 5-20</i>	<i>>10</i> <i>>15</i> <i>>20</i>
Rutting <i>(inches)</i>	<0.20	0.20-0.40	>0.40
Faulting <i>(inches)</i>	<0.10	0.10-0.15	>0.15

*PSR may be used only on routes with posted speed limit < 40mph.

LTPP InfoPave

Find Sections  

General

- Age (Since Original Construction)
- Experiment Type
- Study
- Monitoring Status
- Section
- Treatment Type
- [Location](#) (1) ✘
- Maintenance and Rehabilitation
- Roadway Functional Class

Structure

- [Surface Type](#) (1) ✘
- Base Type
- Subgrade Type

Climate

- Climatic Region
- Freezing Index (Annual)
- Precipitation (Annual)
- Temperature (Annual)

Traffic

- Avg. Annual Daily Traffic (AADT)
- Avg. Annual Daily Truck Traffic (AADTT)

➤ Data

Data Attributes Basic Additional All

AC Pavement Cracking Indices (172 Sections)

- Survey Date
- 2016 HPMS AC Cracking Percentage (%)
- MEPDG AC Cracking Percentage (%)
- MEPDG AC Cracking Length (ft/mi)
- 2014 HPMS AC Cracking Percentage (%)
- 2014 HPMS AC Cracking Length (ft/mi)
- NPRM AC Cracking Percentage (%)

AC Distress Survey Ratings (172 Sections)

- Survey Date
- Record Status
- Surveyor 1 Initials
- Surveyor 2 Initials
- Photo Video Code

There are 173

The labels on available data:

Structure



Go To...

ources and



Manual Distress Data Collected by LTPP Accredited raters. ✘

MANUAL DISTRESS

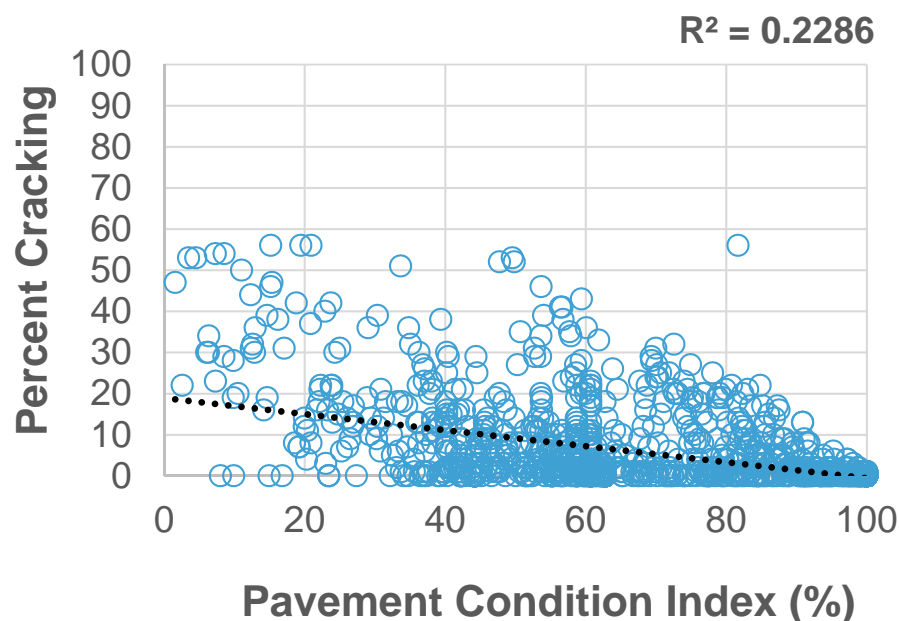


DYNAMIC LOAD RESPONSE

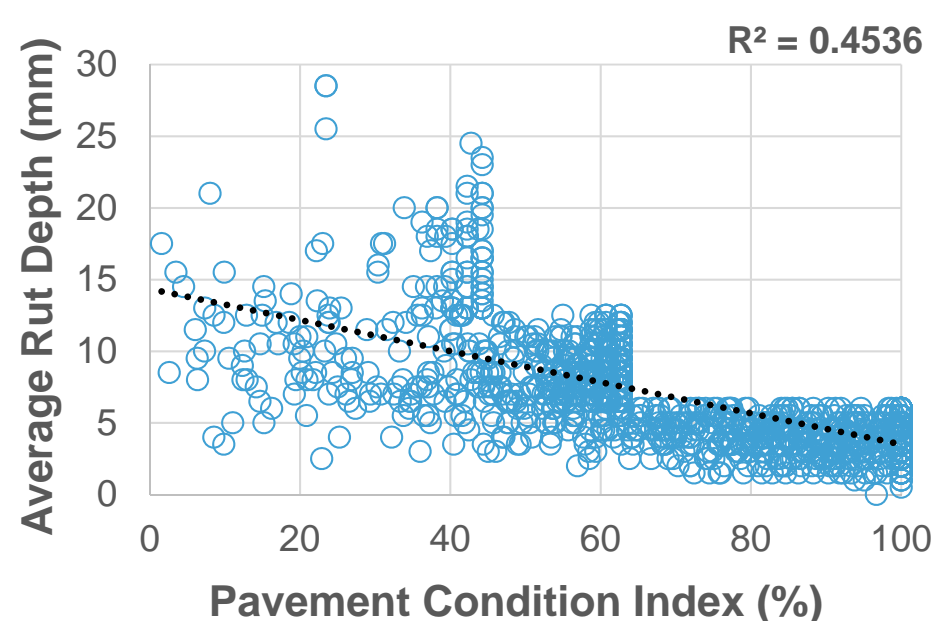
Reporting vs Network Level Measures

- Example: HPMS2016 versus ASTM PCI
- Data: LTPP flexible sections in Texas (173)

HPMS2016 Percent_Cracking
Vs ASTM D6433 PCI



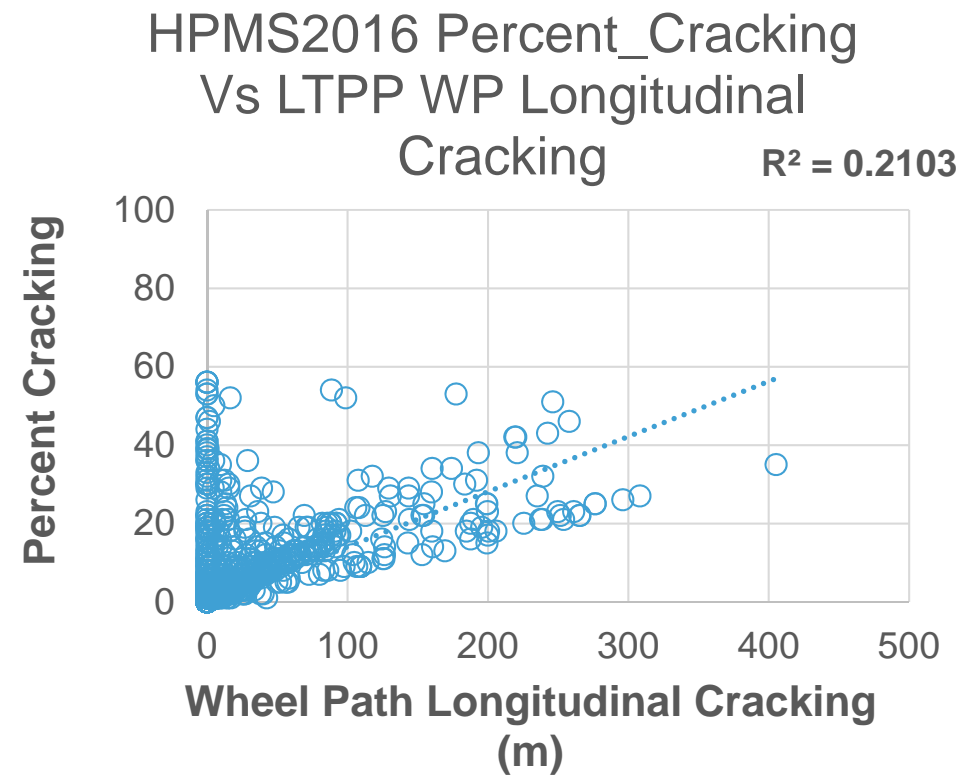
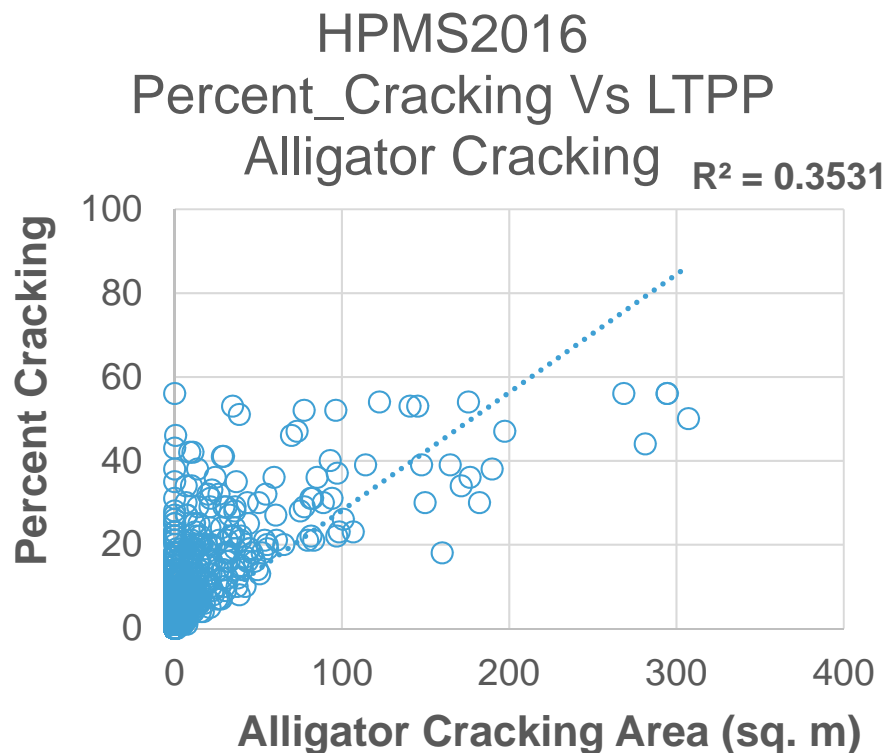
HPMS2016 Rutting Vs
ASTM D6433 PCI



Reporting vs Project Level Measures



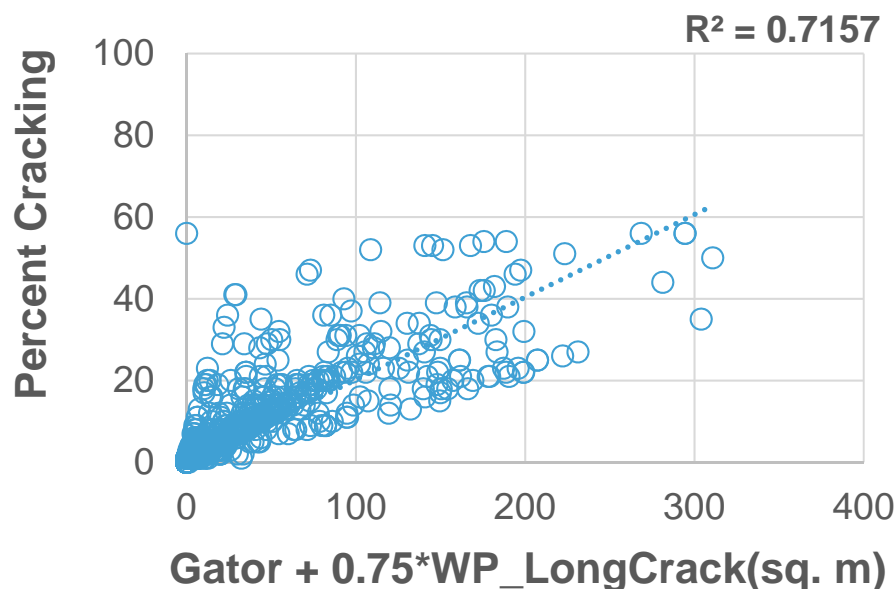
- Example: Cracking Percent versus LTPP Cracking
- Data: LTPP flexible sections in Texas



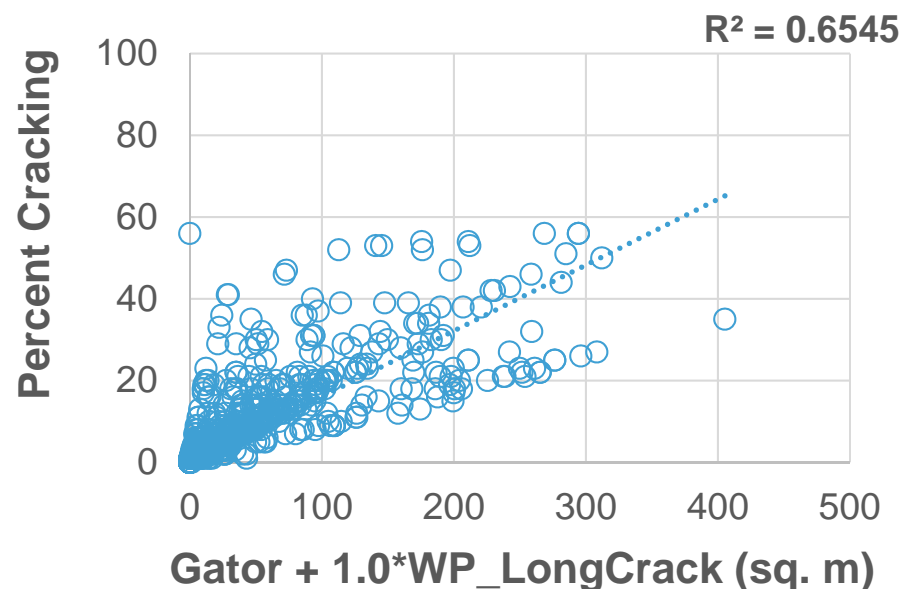
Reporting vs Project Level Measures

- Example: Cracking Percent versus LTPP Cracking
- Data: LTPP flexible sections in Texas

HPMS2016 Percent_Cracking
Vs LTPP
Gator+0.75*WP_LongCrack



HPMS2016 Percent_Cracking
Vs LTPP
Gator+1.0*WP_LongCrack



Insights and Remaining Questions

- Federal HPMS Reporting Measures
 - CANNOT replace existing network-level measures
 - MIGHT be used for treatment decision making
- Agency investment decisions might not be reflected in the reported performance measures
- Should the existing agency measures change?
Probably not!
- Should the federal reporting measures change?
Probably won't!
- Can there be any correlation?



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