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Abstract

Florida's Mobility Performance Measures (MPM) program evaluates mobility in four dimensions: quantity of the travel, quality, accessibility, and utilization of a facility/service. Roadway measures are categorized temporally by area and facility type. One of the key inputs for estimation of many of the mobility performance measures is speed. In the past, speeds were estimated from theoretical models based on numerous assumptions. With the availability of field measured speed data from multiple sources it may no longer be necessary to report historical speeds using theoretical models.

This poster discusses analyses and findings from the process of assessing transitioning from modeled speed to field measured speed for performance measure reporting in Florida. This includes evaluation of existing performance measurement calculation methods, assessment of field measured data from various data sources (such as data from ITS instruments, vehicle probe data from different private vendors, etc.), investigation of methods to integrate field measured speed data with other roadway and traffic data, identification of key performance measures and calculation procedures that will be impacted by transition to field measured speed, and other recommendations pertaining to the transitioning from modeled to measured speed data.

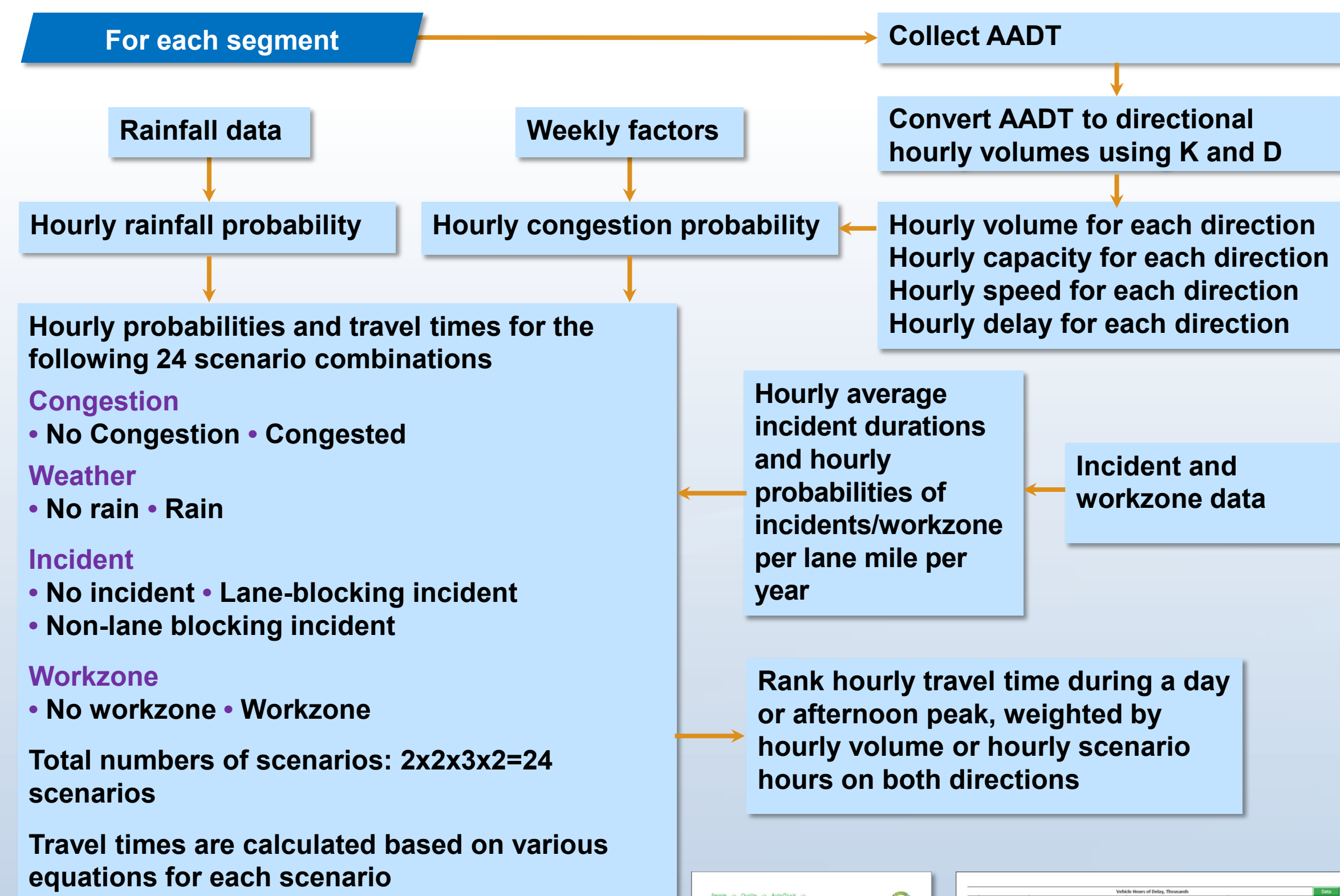
Existing Approaches

- Theoretical model based estimation models
- Complicated but not accurate enough

Existing Speed/Travel Time Estimation Approaches

	Freeways <ul style="list-style-type: none"> Modified Davidson with FDOT parameters
	Arterials <ul style="list-style-type: none"> Undersaturated: Generalized Service Volume Tables Oversaturated: BPR Equation (customized to match Generalized Service Volume Tables at V/C = 1.0)
	Two-Lane Highway <ul style="list-style-type: none"> Highway Capacity Manual 2010

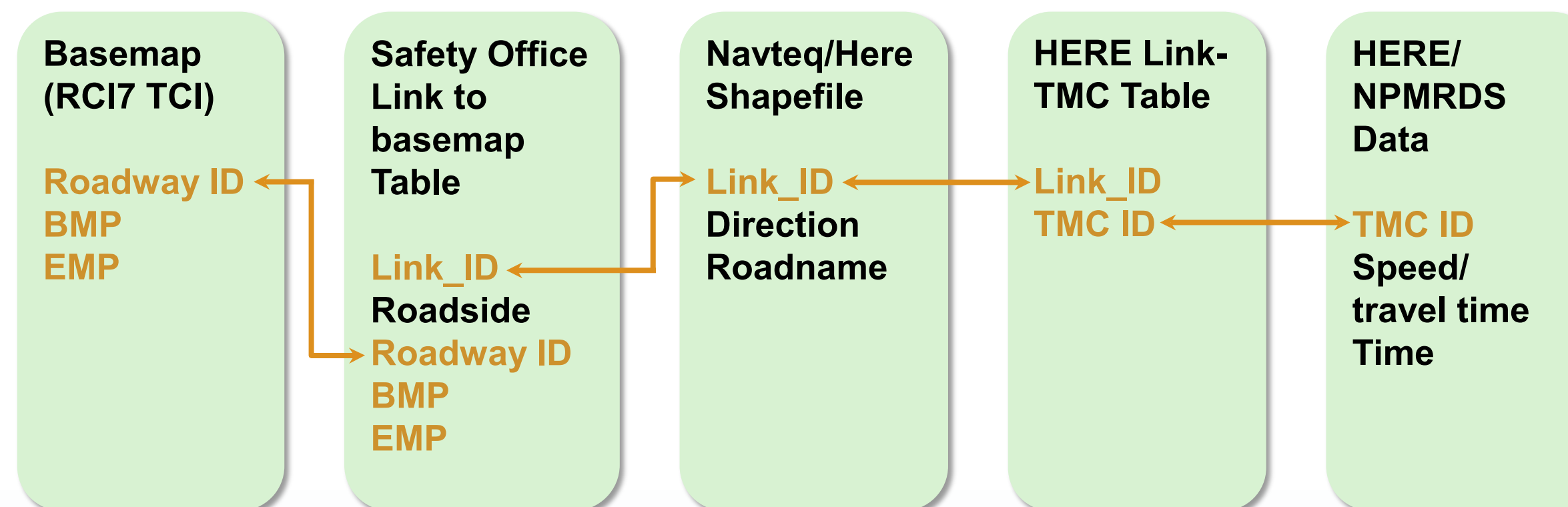
Existing Speed/Travel Time Reliability Estimation Approaches



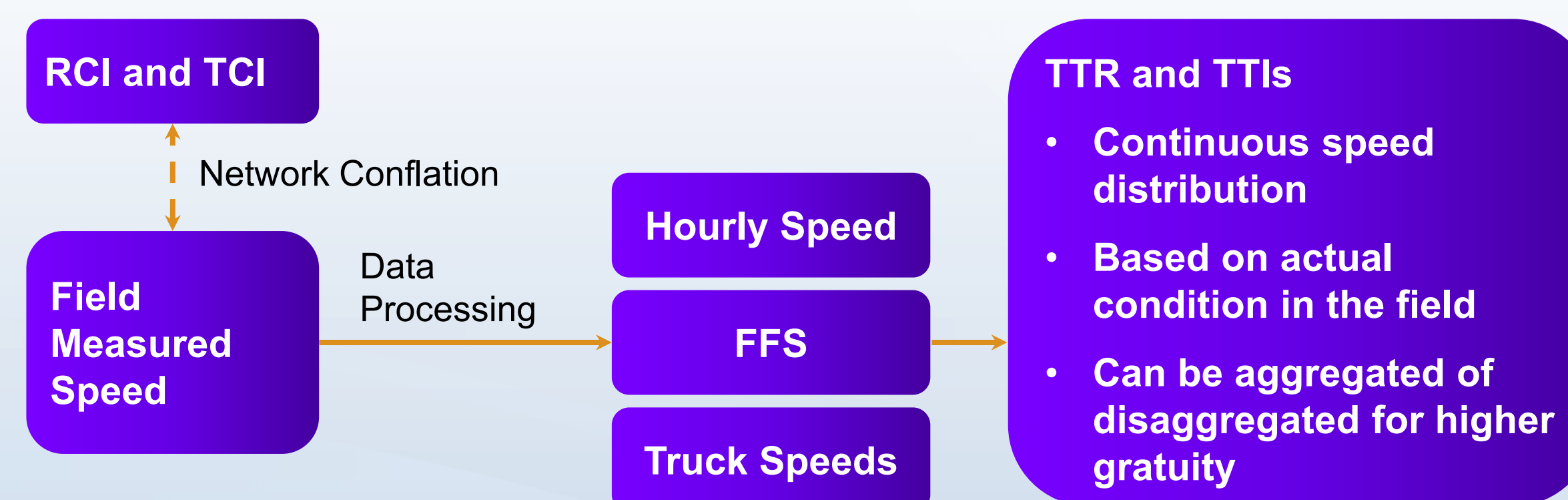
Existing Reports

Data Integration

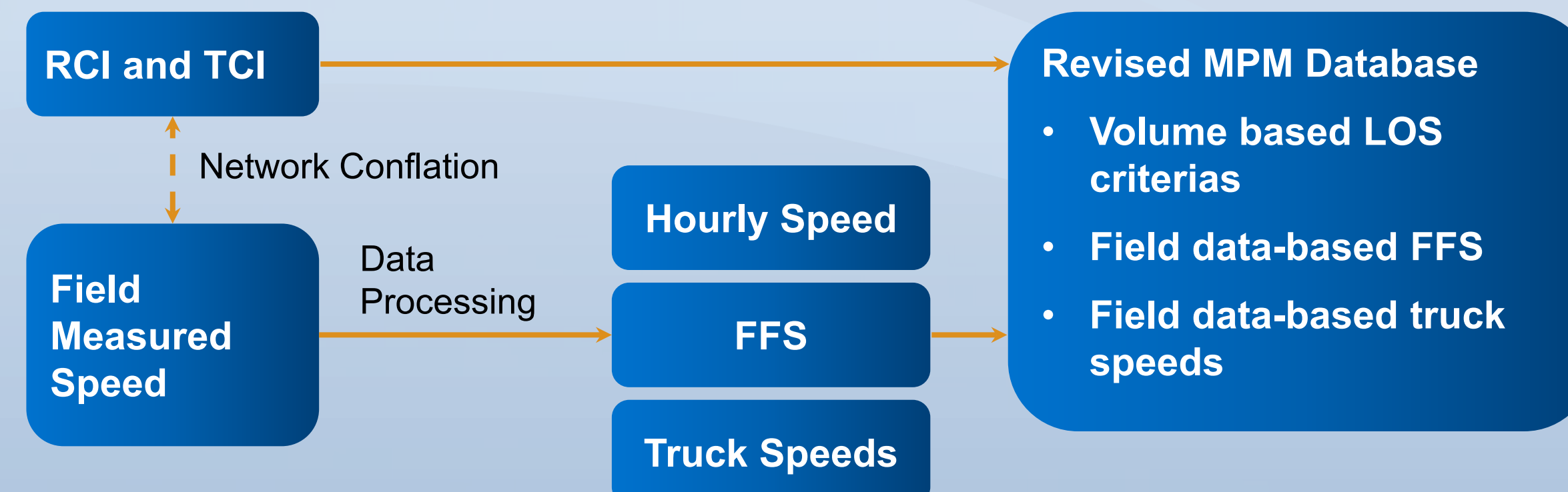
- Field measured speed data from private vendor
 - Five minutes average travel time
 - Separate car and truck data
 - Reported on TMC network
- GIS map conflation to connect to other FDOT data
 - Roadway characteristics (RCI)
 - Traffic characteristics (TCI)



TTR and TTI Procedures with Measured Data



Other Speed and Travel Time Related Performance Measures



Field Measured Speed/Travel Time based Approaches

Data Processing

- Data quality control, e.g., outlier identification and removal
- Data-based models
 - Fill temporal and spatial gaps
 - Estimate truck speeds for non-NHS roadway in Florida SHS

Enhanced Visualization

- FloridaMPM web site
- www.floridaMPMs.com



- Infographic summary pages and corridor reports
- Interactive dashboards
- Allow ad-hoc data and analysis request