

Closing the Freight Parking Gap

Forecasting and validating corridor-level truck parking need

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ITE Western District Annual Meeting | 2026



AGENDA

1. Background
2. Forecasting Methodology
3. I-35 Example
4. Results and Validation
5. Summary
6. Limitations

BACKGROUND

Truck parking is a safety requirement

Jason's Law

National priority to assess CMV parking adequacy on the National Highway System.

- Enacted October 1, 2012
- 2015 National Study
- 2018/2019 Update

Hours-of-Service

Mandatory off-duty periods for long haul drivers and breaks for short haul drivers

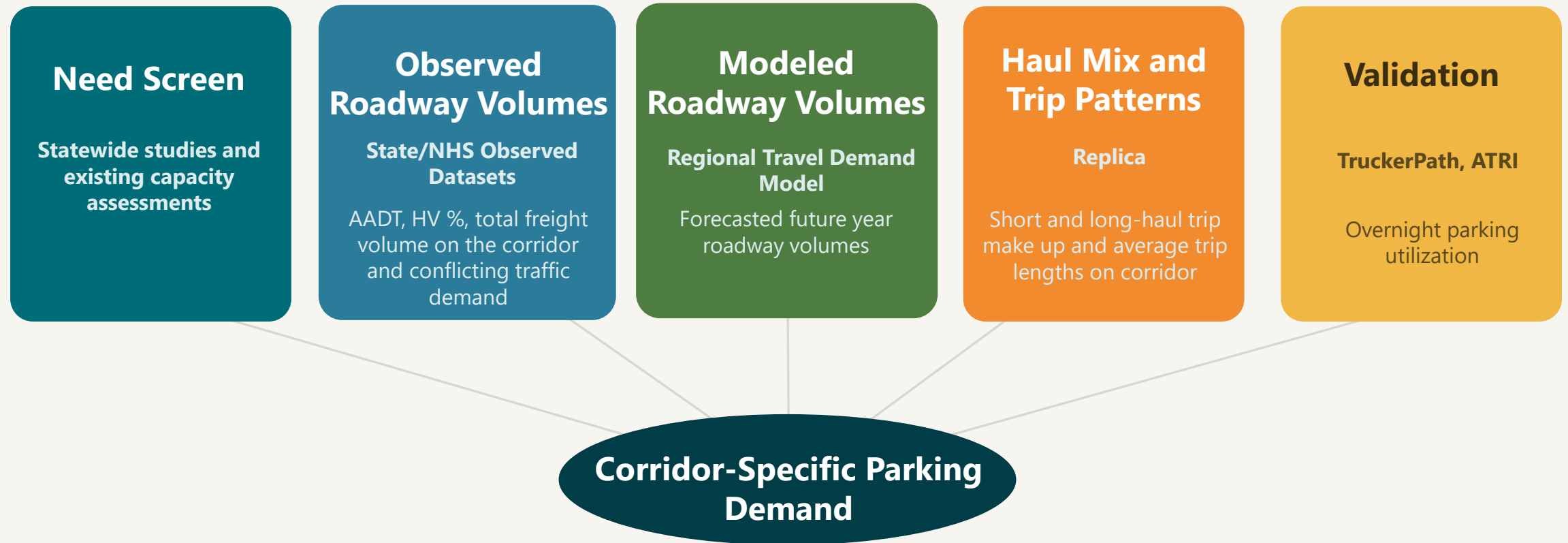
- Required off-duty periods inform predictable peak hour and overnight demand

Planning Gap

Statewide need must be translated into corridor and site-scale capacity decisions.

METHODOLOGY

Data-Sources and Inputs



Methodology

Peak Hour Demand Forecasts

Peak-hour Demand (PHD) — FHWA

The combined parking demand during the peak hour of need, for both short haul (SH) and long haul (LH) trips.

Peak-hour demand is forecasted using the total amount of truck-driving hours on a corridor, multiplied by the required rest time, multiplied by a peak hour factor*

**Factors calibrated by FHWA to field counts in four metros.*

Daily LH Driving Hours

Driving Hours = AADT * % Trucks * % LH Trips on Corridor * Travel Time



Peak-Hour LH Parking Demand

Demand = LH Hours * Required Break * Peak-Hour Factor (0.09)

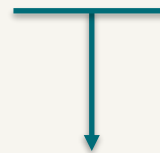
Daily SH Driving Hours

Driving Hours = AADT * % Trucks * % SH Trips on Corridor * Travel Time



Peak-Hour SH Parking Demand

Demand = SH Hours * Required Break * Peak-Hour Factor (0.02)



Peak Hour Demand

Peak Hour LH + Peak Hour SH Demand

Methodology

Overnight Demand Forecasts

Overnight Demand — Modified Methodology*

Parking demand for long haul trips requiring overnight rest time.

Overnight demand is forecasted using the total truck volume on a corridor, multiplied by the number of truck-driving hours, multiplied by the percent of off-duty time within a work week, multiplied by a peak hour factor

**Overnight methodology adapted from CTDOT, modified by modeling team*

Daily LH Driving Hours

$\text{Driving Hours} = \text{AADT} * \% \text{ Trucks} * \% \text{ LH Trips on Corridor}$

Overnight LH Parking Hours

$\text{Total Overnight Demand} = \text{LH Hours} * \% \text{ Of Off-Duty time in Week (0.635)}$

Peak Overnight Demand

$\text{Peak Overnight Demand} = \text{Total Overnight Demand} * \text{Peak Hour Factor (0.09)}$

EXAMPLE CORRIDOR

I-35 from Austin to San Antonio

~31 mi

Primary study segment

12–19%

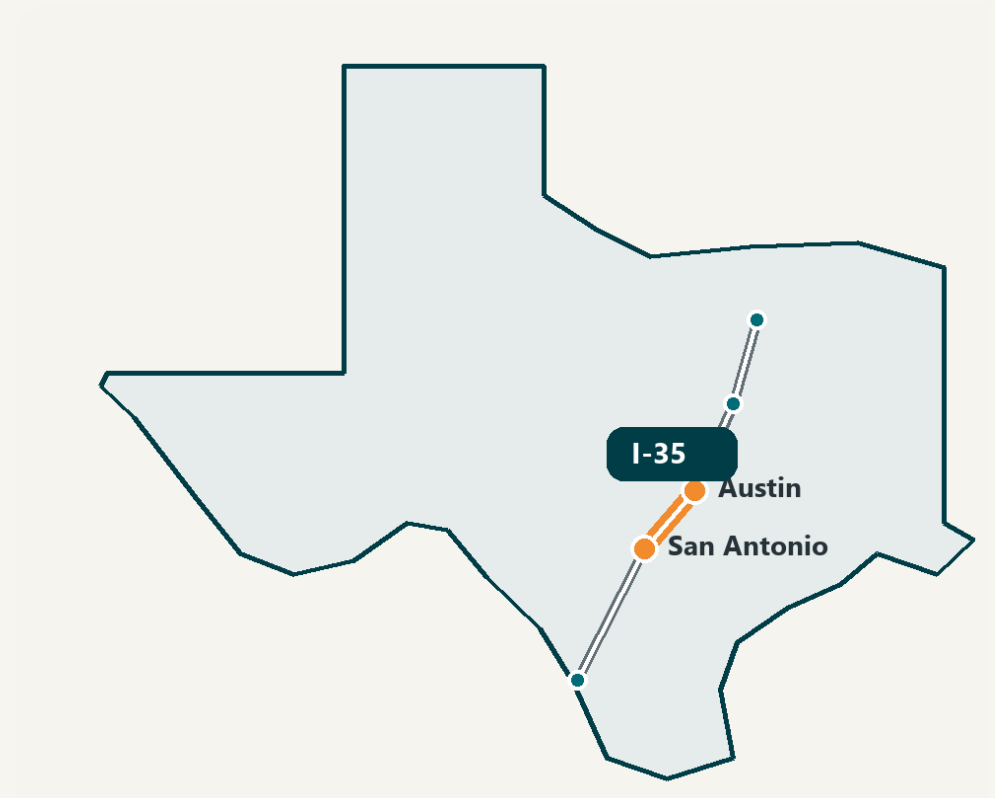
Truck share of traffic

343

Existing spaces

Med–High

TxDOT 2020 Need Rating



EXAMPLE CORRIDOR

Future demand outgrows today's supply

81-92%

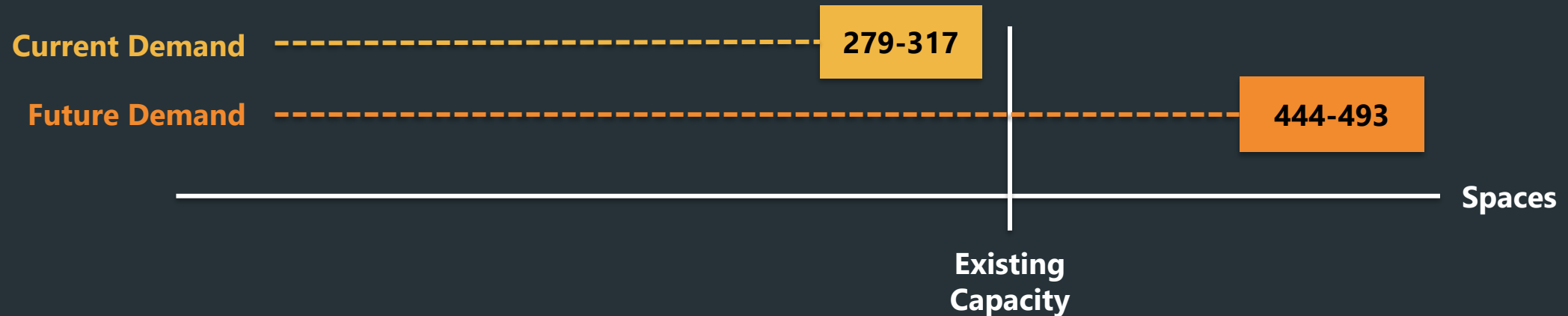
Current Demand vs. Existing
Supply

129-144%

Future Demand vs. Existing Supply

100-150

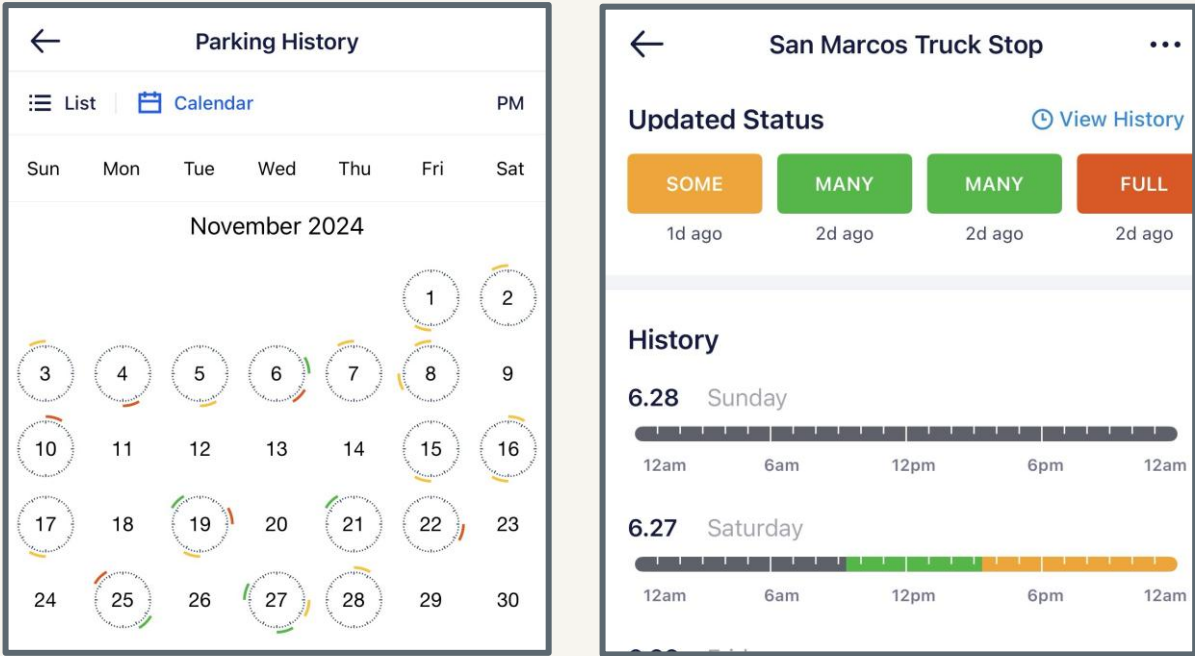
Additional Spaces Needed



VALIDATION

Crowd-sourced Utilization Data

Trucker Path – Current and Historical Utilization



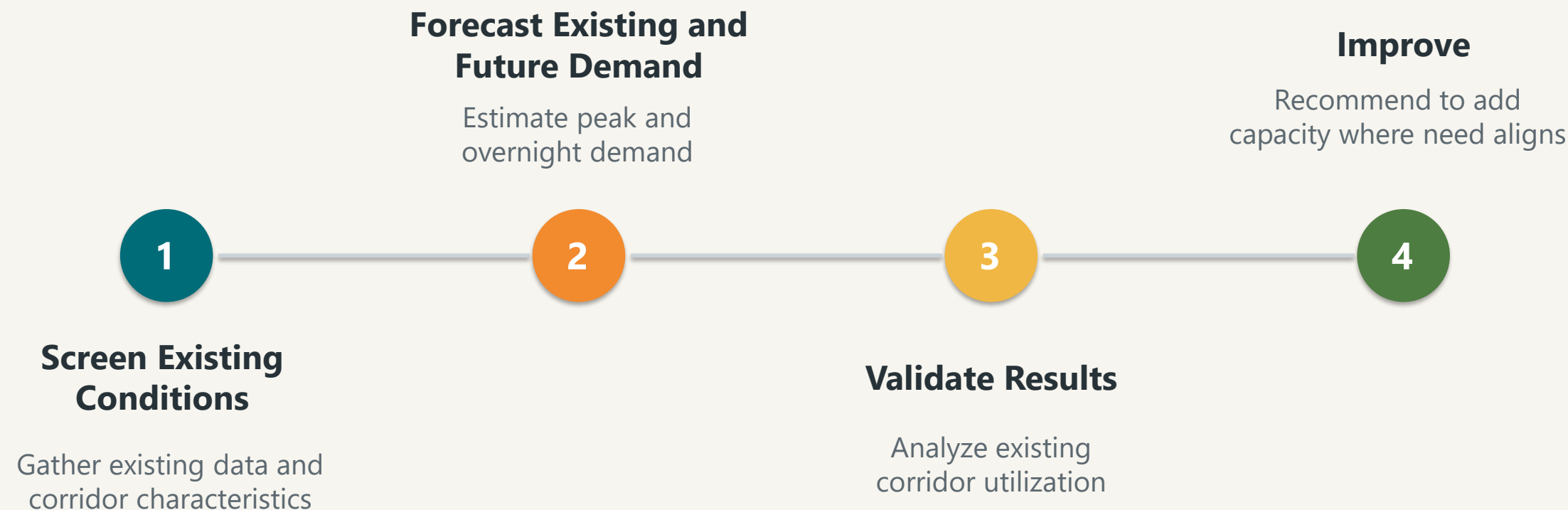
Modeled (Demand to Capacity Ratio)



Observed Utilization



SUMMARY



LIMITATIONS AND IMPROVEMENTS

LIMITATION: CORRIDOR SPECIFIC

- Relies on segment selection: **uniform** AADT and trip making characteristics
- Overestimates existing utilization on **low-capacity** corridors
- Examines demand in **aggregate**, not at specific sites
- Does not account for **quality** of parking and amenities on a corridor

LIMITATION: CROWD SOURCED VALIDATION

- Potentially excludes illegal / shoulder utilization for corridors with low existing capacity
- Relies on high crowd **participation** on high **volume** corridors

IMPROVEMENT: GPS-LEVEL VALIDATION

- Exact space counts
- Year-round: true seasonal patterns
- Reveals illegal / shoulder parking
- Enables segment-specific calibration

Questions?

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