CALIFORNIA STATEWIDE TRUCK PARKING STUDY

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California State Transportation Agency – Representing Caltrans

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WHY STUDY TRUCK PARKING?

NEEDS IDENTIFIED

Numerous plans and organizations called for action on truck parking – including the CA Sustainable Freight Action Plan

TECHNOLOGICAL CHANGES

Namely the ability to get global positioning systems (GPS) data to see – anonymously – where there is unmet demand for parking

LACK OF DATA

Despite doing extensive outreach and surveys, our Technical Advisory Committee members lacked concrete data to help decisionmakers

NEED TO PRIORITIZE

Caltrans could not answer where the top priority locations to implement projects were statewide without better data

STUDY OVERVIEW

Study Funded

- Caltrans State Planning and Research Part II Funds
- Combined with D11 San Diego and Headquarters proposals
  - San Diego had electrification component
  - HQ had Private-Public partnerships and data collection

Consultant Procured

- Selected Cambridge Systematics who previously completed several state studies, including Texas
- Global Positioning System data obtained from American Transportation Research Institute (ATRI)

12 Main Tasks + Numerous Subtasks

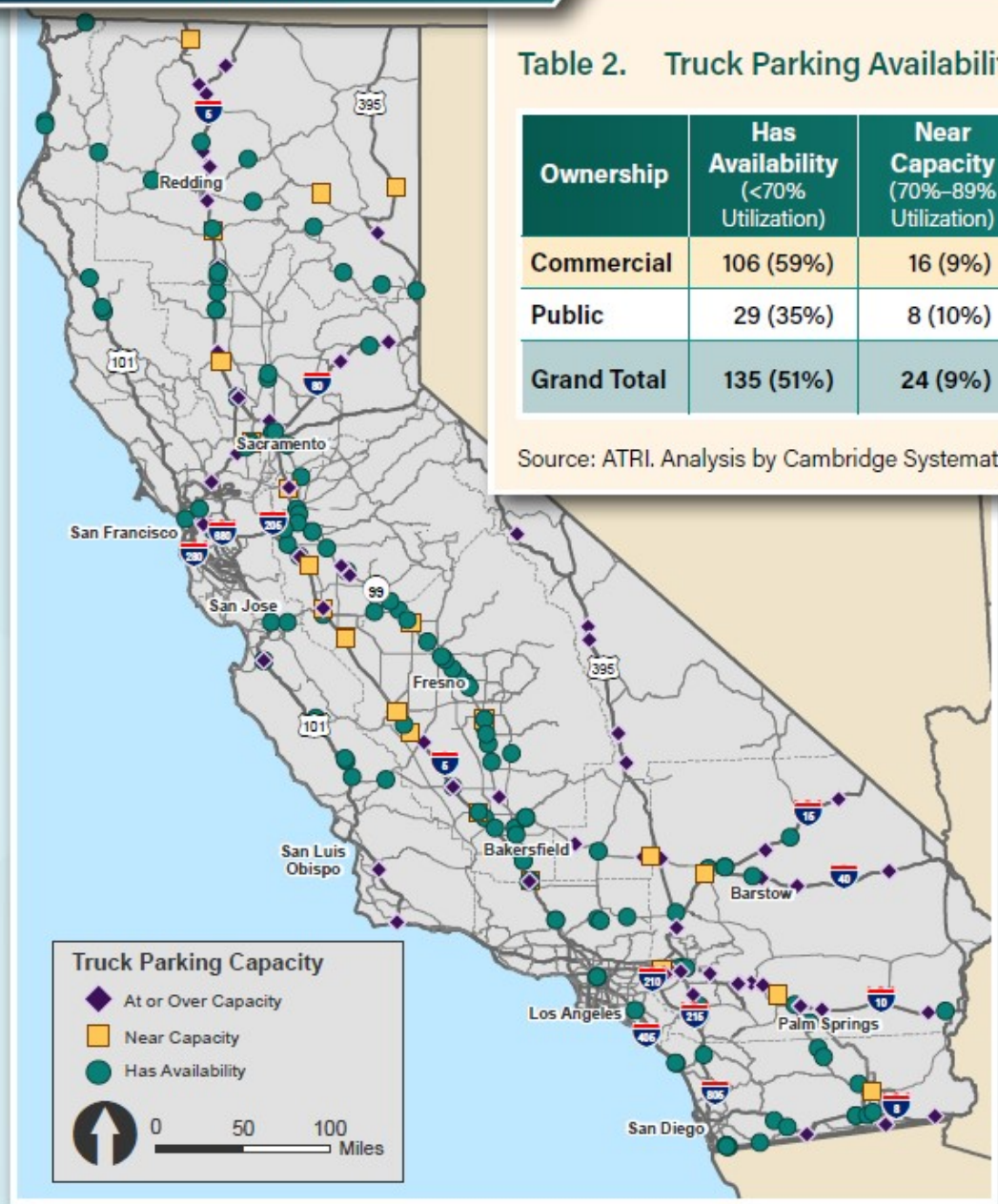
- Tasks 1-5 concerned with project management and data collection
- **Task 6- Feasibility Guide**
- **Task 7- Stakeholder Outreach and Engagement**
- **Task 8- Truck Parking Challenges and Public-Private Partnership Plan**
- **Task 9- Truck Parking Demand Model**
- Tasks 10-12- Implementation Plan and Study Reports

KEY FINDINGS

PARKING UTILIZATION

Facility Type	Number of Facilities	Have Capacity (<70% Utilization)	Near Capacity (70% - 89% Utilization)	At/Over Capacity (>90% Utilization)
All Public Parking Facilities	86	**39 (45%)**	9 (10%)	**38 (44%)**
All Commercial Parking Facilities	179	**108 (60%)**	17 (9%)	54 (30%)
National Chain Truck Stops	60	12 (20%)	11 (18%)	**37 (62%)**
Urban Facilities	86	**59 (69%)**	3 (3%)	24 (28%)
Rural Facilities	179	**88 (49%)**	23 (13%)	68 (38%)
All Facilities	265	**147**	26	92

Figure 7. Demand at Designated Locations



Source: ATRI. Analysis by Cambridge Systematics (2021).

Table 2. Truck Parking Availability at Designated Locations

Ownership	Has Availability (<70% Utilization)	Near Capacity (70%–89% Utilization)	At or Over Capacity (>90% Utilization)	Total
Commercial	106 (59%)	16 (9%)	58 (32%)	180 (100%)
Public	29 (35%)	8 (10%)	47 (56%)	84 (100%)
Grand Total	**135 (51%)**	**24 (9%)**	**105 (40%)**	**264 (100%)**

Source: ATRI. Analysis by Cambridge Systematics (2021).

Table 3.7 Demand at Undesignated Locations by District

District	24-Hour Demand	Percent of 24-Hour Demand	Total Peak Demand
1—North Coast	58	1%	17
2—Redding	353	3%	191
3—Sacramento	1,343	8%	635
4—Bay Area	1,691	13%	528
5—Central Coast	360	2%	94
6—Central Valley	1,140	5%	488
7—LA	4,088	36%	1,227
8—Inland Empire	3,459	16%	1,786
9—Eastern Sierra	204	2%	55
10—Stockton	1,062	4%	487
11—San Diego[1]	–	–	437
12—Orange County	713	6%	156
Total	**14,864**	**100%**	**5,775**

UNDESIGNATED PARKING BY DURATION

Duration	Percent Share
% Short Break (< 1 hour)	66%
% Short Staging (1-4 hours)	25%
% Long Staging (4-8 hours)	4%
% 10-hour Rest (8-14 hours)	5%

SAFETY

Figure 5.2 Crashes Involving Parked Trucks Five Year Trend

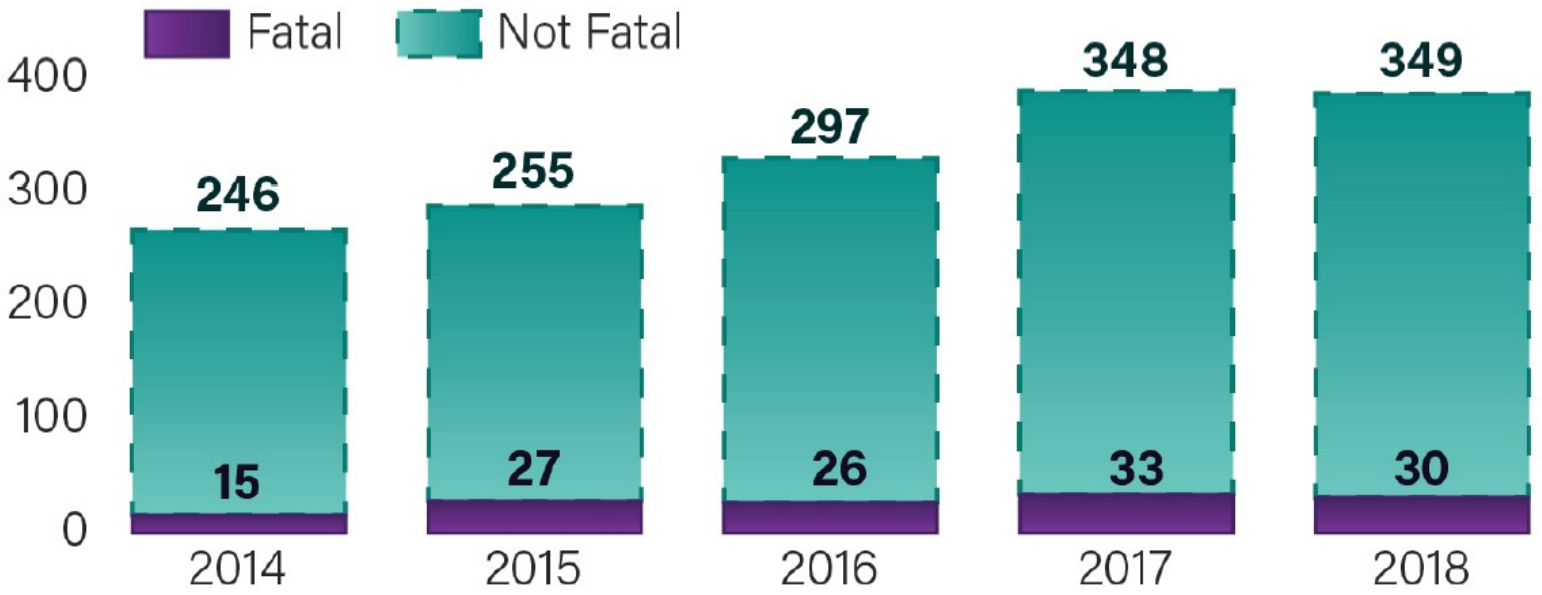
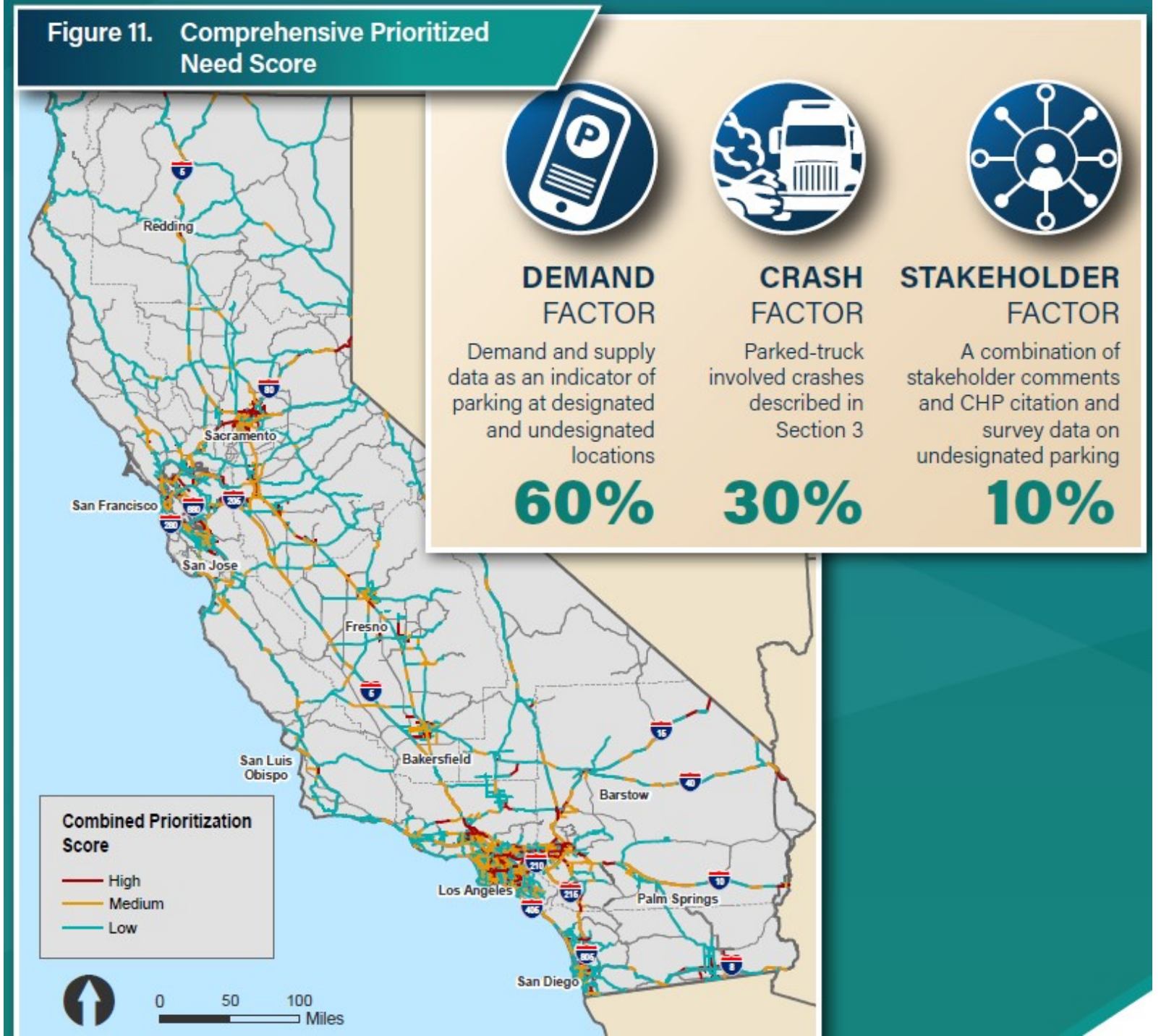


Figure 11. Comprehensive Prioritized Need Score



DEMAND FACTOR

Demand and supply data as an indicator of parking at designated and undesignated locations

60%

CRASH FACTOR

Parked-truck involved crashes described in Section 3

30%

STAKEHOLDER FACTOR

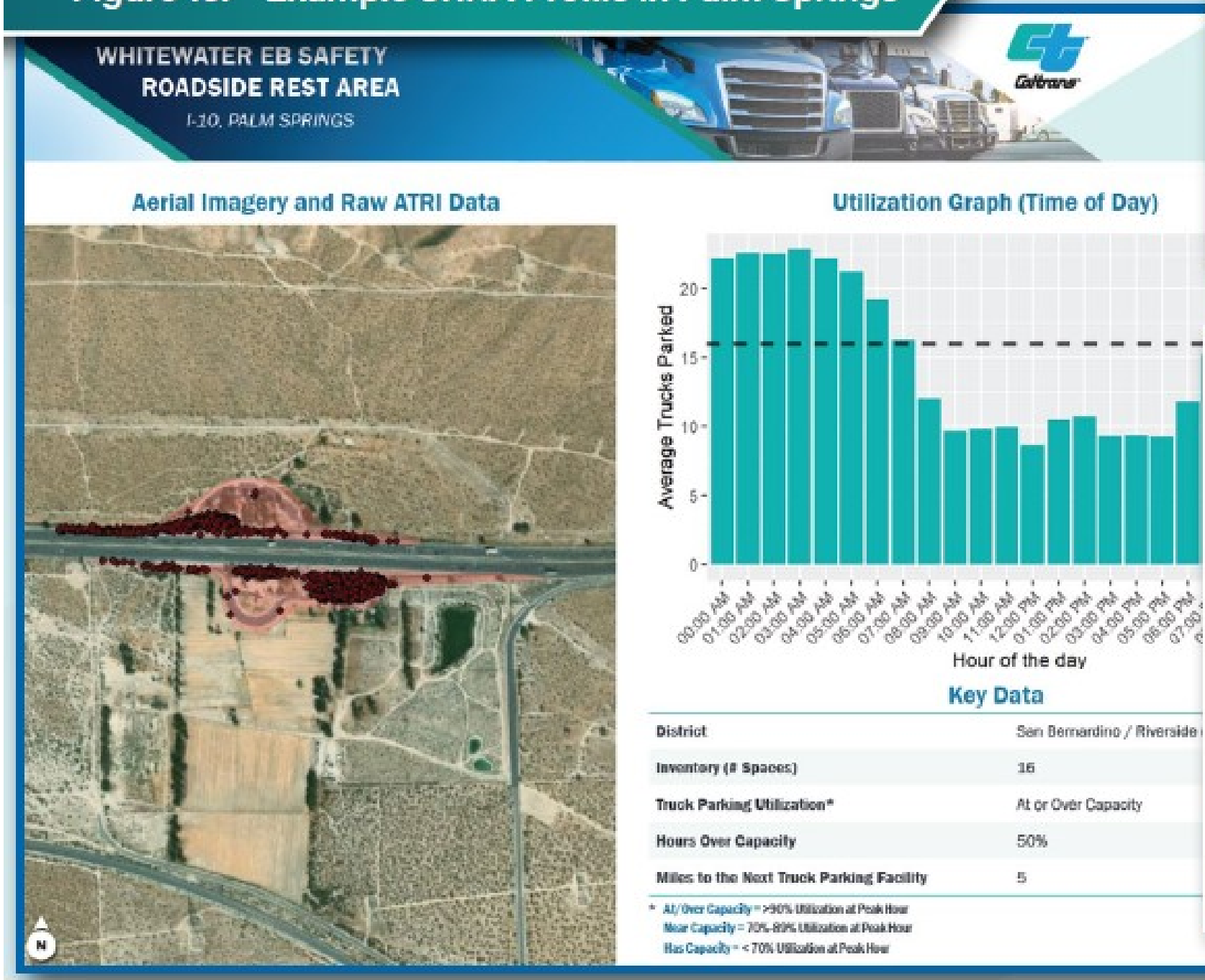
A combination of stakeholder comments and CHP citation and survey data on undesignated parking

10%

Table 7. Very High Priority Regions and Corridors

Region/ Corridor (ID)	Spaces	Peak hour Utilized Spaces	Peak hour Undesignated Trucks	Peak Hour Deficit	Deficit Per Network Mile
I-80 Corridor Truckee (D3-1)	58	48	175	-165	-2
Sacramento (D3-3)	356	309	372	-325	-1
Oakland (D4-3)	810	862	268	-320	-1
West Covina (D7-3)	0	0	231	-231	-1
Los Angeles (D7-4)	85	7	881	-803	-1
I-40 Corridor Needles (D8-2)	18	55	145	-182	-2
I-15 Corridor Victorville (D8-5)	975	1,084	131	-240	-1
Inland Empire (D8-6)	1,660	1,577	1,126	-1,043	-2
I-10 Corridor Blythe (D8-9)	128	97	256	-225	-3
San Joaquin County (D10-1)	897	878	352	-333	-1
San Diego (D11-1)	509	166	437	-94	-0.2

Figure 15. Example SRRA Profile in Palm Springs



More detail on each public SRRA can be found in

APPENDIX B:
SAFETY ROADSIDE REST AREA PROFILES

The demand analysis conducted during this study found that

48 SRRAs *were* **AT** *or*

OVER CAPACITY

during **PEAK HOUR.**[5]


KEY
TASKS

TASK 6 – FEASIBILITY GUIDE

California-focused research to develop methodology and criteria for evaluating sites, at a planning level, for truck parking feasibility

San Diego Pilot Project Integration

- Potential Truck Parking sites identified and prioritized for a truck parking pilot project
- Assess excess right-of-way for potential truck parking opportunities

Electric Charging Integration for Truck Parking- Coordination

- CA Energy Commission HEVI-LOAD effort
  - HEVI-LOAD tied to AB 1227, which calls on the CEC to project charging infrastructure needs to decarbonize trucking and reduce impacts of diesel air pollution
- CharIn to use Feasibility Guide to help effort to standardize charging

TASK 7 – STAKEHOLDER OUTREACH AND ENGAGEMENT

- Reliance on the CA Truck Parking Technical Advisory Committee
  - Over 110 members, at least 70% actively engaged
  - Federal, State, and local agencies and research organizations
  - Ports of LA, Long Beach, and Oakland
  - Private companies
    - Trucking companies, truck parking operators, warehousing representatives, electric truck manufacturers
  - Advocacy organizations
    - CA Trucking Association, NATSO, Harbor Trucking Association, Women In Trucking
- Interviews and surveys with drivers
- Equity-focused workshops in impacted communities
- Outreach to numerous agencies, organizations

TASK 8 – PUBLIC-PRIVATE PARTNERSHIP PLAN

- Steering Committee identified existing challenges and solutions to implementing formal or informal P3s for funding truck parking facilities.
- Partnership Screening Approach consists of multiple screening factors such as, but not limited to:
    - Policy Goals
    - Organization Capacity
    - Legal
    - Public Support
    - Project Risk Allocation
    - Affordability

Screening Framework (example partnership)

Screening Factors	Preliminary Evaluation (Promising; Neutral; Challenging; NA)	Narrative Details to Support Preliminary Evaluation	Recommendations for Further Due Diligence
Affordability			
What are the near term and long term cost requirements?	Neutral / Potentially Challenging 	The upfront investment in property infrastructure may be significant, depending on the size and existing conditions of the property.	Conduct an initial assessment of the potential magnitude of infrastructure investment costs that may be needed for the site.
Does the partnership have revenue generation potential?	Promising 	If the leasing agreement is structured correctly and the identification of a potential partners is conducted in an effective manner, the location of the property and the associated improvements could support the generation of significant leasing revenues over a period of time.	Conduct an initial assessment of the property market in the vicinity to help determine the appropriate fair market value.
Are there local funding sources that can support the cost requirements?	Neutral 	Local jurisdiction may provide funding for pedestrian/bicycle improvements or public services offered through the facilities.	Conduct assessment of available funds for identified improvements/services.

TASK 9 – TRUCK PARKING DEMAND MODEL

The California Environmental Quality Act is a disclosure process to identify impacts of all kinds to humans, the environment

Caltrans reviews local development projects (including freight facilities) and comments on impacts of developments to the transportation system

Cambridge developed a tool to help Caltrans planners estimate the demand for truck parking a new shipper/receiver facility may generate

TASK 9 – TRUCK PARKING DEMAND MODEL

Purpose-

- Estimate truck parking demand (number of spaces needed) generated by new development
- Help establish a framework for identifying mitigation and/or creating in lieu mitigation fee programs

Study Area and Data-

- ATRI truck GPS data for all of San Diego County
  - Able to track all stops made within the County
- GIS shapefiles of all parcels and public right-of-way in County

Table 4.1 Parking Rates of Each Service Industry

Land Use	Total Trips	Trips with Parking	Parking Rate
Manufacturing	64,464	6,626	10.3%
Warehouse	9,564	976	10.2%
Transportation Logistics	6,825	706	10.3%
Total	80,853	8,308	10.3%

Table 4.2 Maximum Parking Occupancy Factor by Service Industry

Service Industry	Peak Parking Occupancy Factor
Manufacturing	12%
Warehouse	22%
Transportation and Logistics	42%

EXAMPLE APPLICATION OF THE MODEL

A traffic impact study might estimate that a facility classified as warehousing would generate 1,000 daily truck trips. Approximately 103 (10.3 percent of the 1,000 truck trips) would need parking, and of those, 23 trucks would need parking at the same time (103 trucks X 22 percent). This implies that the facility should provide about 23 parking spaces to meet the parking demand that their operations would generate.

SUMMARY

The CSTPS is just the first step. Now we understand the scale of the problem and areas of focus. We have data we can present to lawmakers and decision makers and not just anecdotal evidence. The CSTPS can be used to advocate for new projects in the pipeline. This process to develop new projects will take years, but now we have the data to show this is an issue that no longer be ignored.

THANK YOU

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