Statewide Truck Parking Solution

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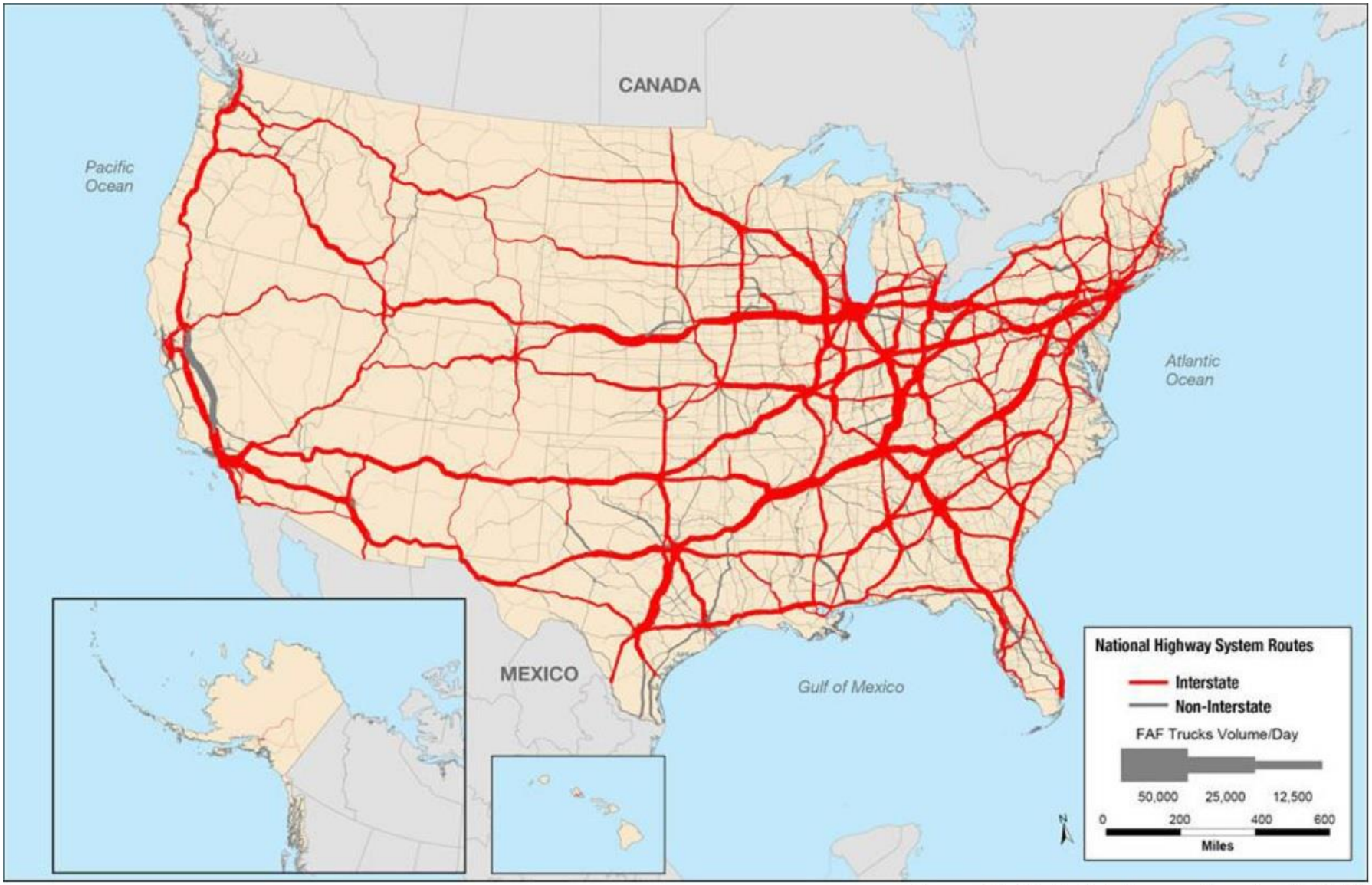
Virginia is a key National Freight Corridor



Source: Freight Analysis Framework version 3.4 (2013)

Combination Truck Volumes on the Nation's Highways

Federal Truck Parking policies

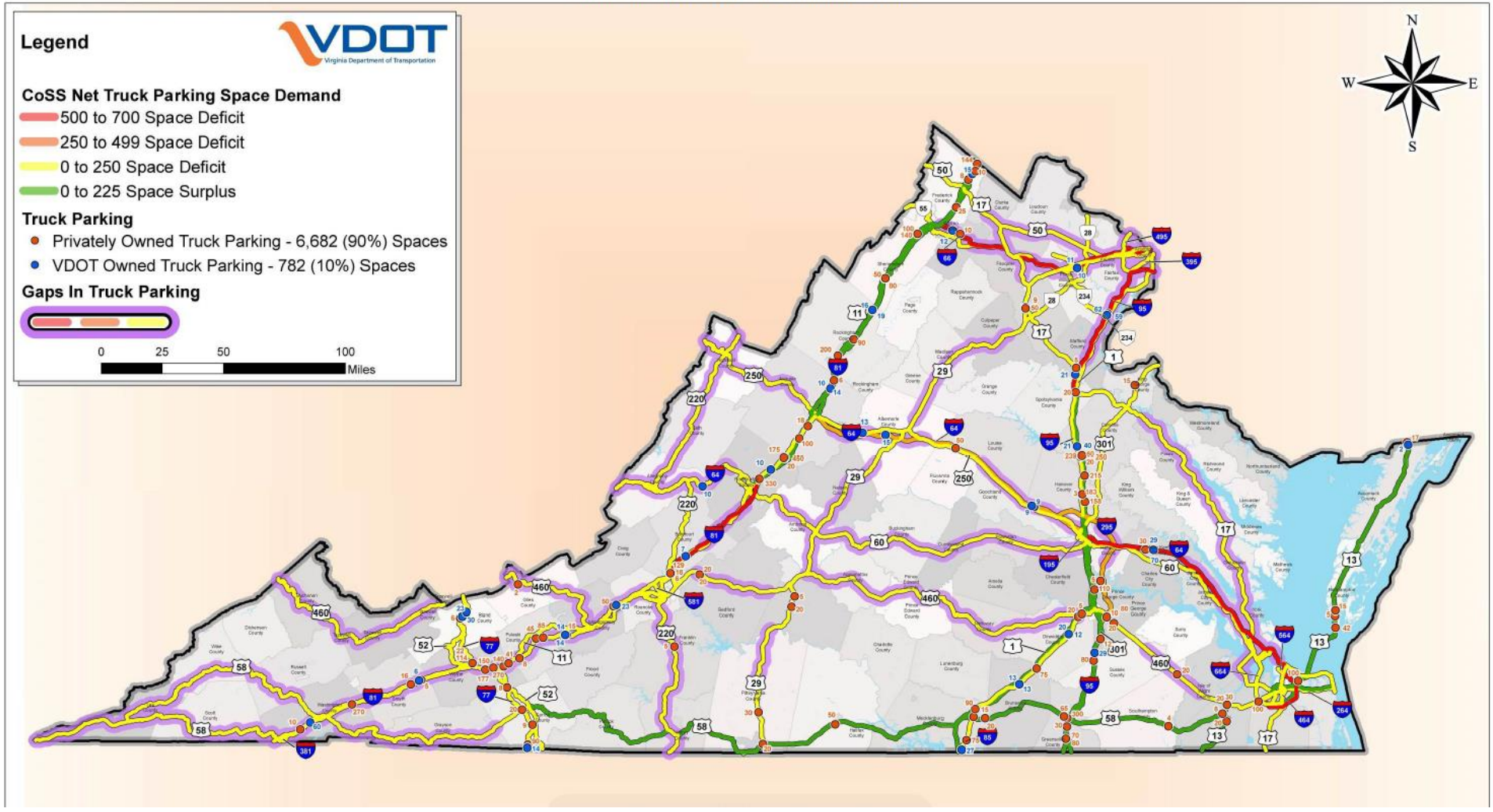
- **MAP-21**
  - **§ 1115 National Freight Policy – improve performance of national freight network**
  - **§ 1401 Jason's Law – extended eligibility of federal funds for truck parking projects and requires state to conduct a truck parking study**
- **CFR 49, Part 395 (Hours of Service)**
  - **11-hour driving limit** (after 10 hrs off)
  - **14-hour limit** (after 10 hrs off following on-duty)
  - **Rest Breaks** (8 hr limit since last rest period)
  - **60/70 Hr on-duty limit** (in 7/8 days)
- **CFR 23, Part 752 (defines Rest Areas)**
- **CFR 23, § 111 (limits commercialization)**

Virginia truck parking policies

- 24VAC30-50-10 – Waysides/Rest Areas parking and sleeping
- COV § 46.2-888 – no stopping on highways
- COV § 46.2-889 – location of parked vehicles
- COV § 46.2-1220, 1222.1, 1222.2, and 1224 – locality authority to regulate parking
- COV § 46.2-1223 – authority for VDOT Commissioner to regulate parking on primary/secondary system
- DMV Driver's Manual – guide on where to park and prohibitions.

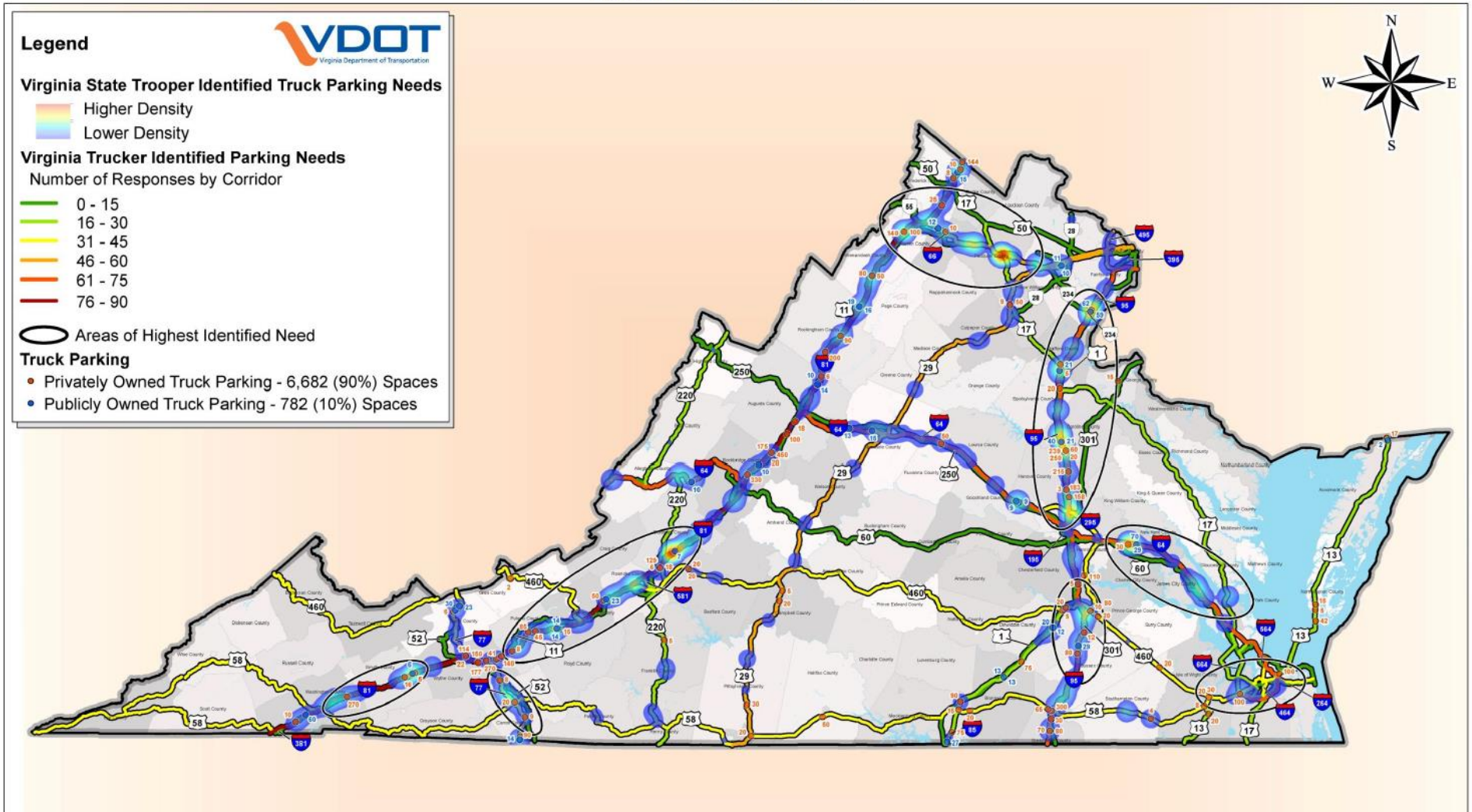
VDOT Truck Parking Study identified gaps in available parking

Figure 16: Truck Parking Gaps on Study Corridors



Virginia State Police and Virginia Truckers identified areas of need

Figure 17: Truck Parking Survey Demand



35 Rest Areas have truck parking

Corridor	MM	Lot Name/Task	Spaces
I-64	2	Jerry Run E	11
	34	Longdale Furnace E	6
	34	Longdale W	2
	105	Charlottesville E	13
	113	Charlottesville W	14
	145	Louisa E	2
	145	Louisa W	2
	169	Goochland E	9
	168	Goochland W	9
	213	New Kent E	70
	213	New Kent W	29
I-66	3	Front Royal E	18
	16	Fauquier	2
	48	Manassas E	9
	48	Manassas W	9
I-77	1	Lambsburg N	14
	59	Rocky Gap S	24
	61	Rocky Gap N	26

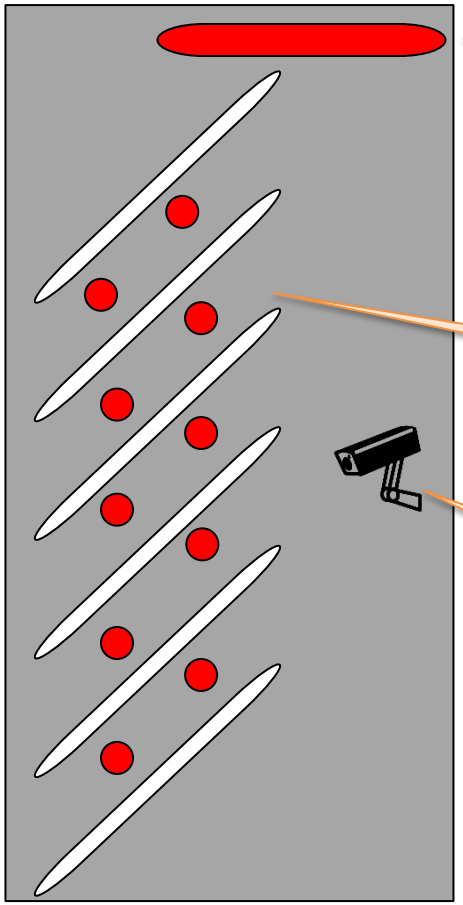
Corridor	MM	Lot Name/Task	Spaces
I-81	1	Bristol NB	7
	13	Abingdon	48
	53	Smyth	6
	61	Rural Retreat	2
	108	Radford N	14
	108	Radford S	14
	129	Ironto	24
	158	Troutville	7
	199	Fairfield	10
	232	Mount Sidney N	13
	232	Mount Sidney S	9
	262	New Market N	18
	262	New Market S	16
	320	Winchester	11
I-85	32	Alberta N	13
	0.5	Bracey N	22
	32	Alberta S	13
	55	Dinwiddie N	13
	55	Dinwiddie S	20
I-95	1	Skippers W	14
	37	Carson N	35
	104	Ladysmith S	20
	104	Ladysmith N	39
	131	Fredricksburg WC S	23
	154	Dale City Trucks N	59
	154	Dale City Trucks S	62

Truck Parking Management Goals

- **Provide truck drivers access to real-time and accurate information about the availability of safe, legal parking places (public & private)**
- **Increase utilization of public truck parking spaces**
- **Reduce the time truck drivers take searching for available safe, legal parking spaces (public & private)**

Parking System uses multiple sensors

Controller sends raw data to central system



Entrance/exit detectors count vehicles in and out

Individual space detection identifies empty/occupied spaces

Pole mounted PTZ camera allows operators to resolve errors/issues

OpenTMS

www.openroadsdemo.com/opentmsweb/#Parking:route=queue://ParkingAreaState.rpc,id=477107428

OPENTMS | Map | Manage | Devices | More | john.horner

Parking Guidance System > Blue Mountain Plaza NB

Current Status | Signs | Maintenance

DETAILS AND LOCATION

Road: I-81N / 51 /
Data Received: 11/11/2016 12:06:49
Update Mode: Automatic

OCCUPANCY

Available: 11
Total: 16
Threshold: 90%
Status: OPEN

Entrance count

ACTIONS

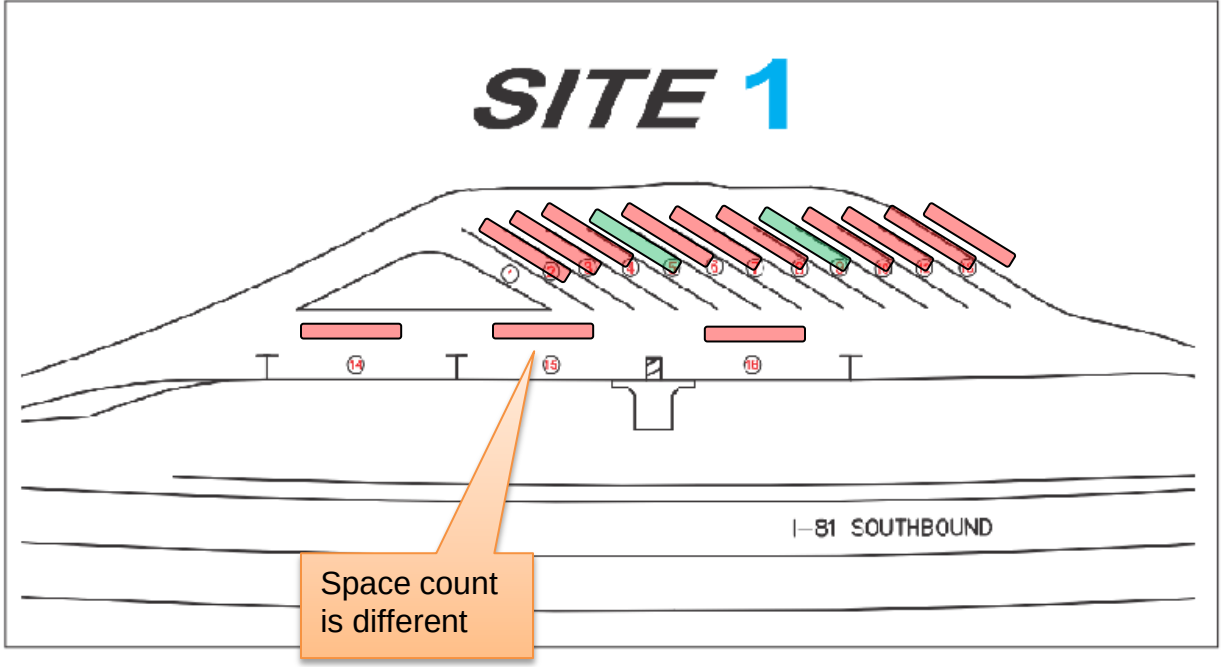
Enable Manual Mode

Adjust Count Report

Open Lot Camera

Operator opens camera control

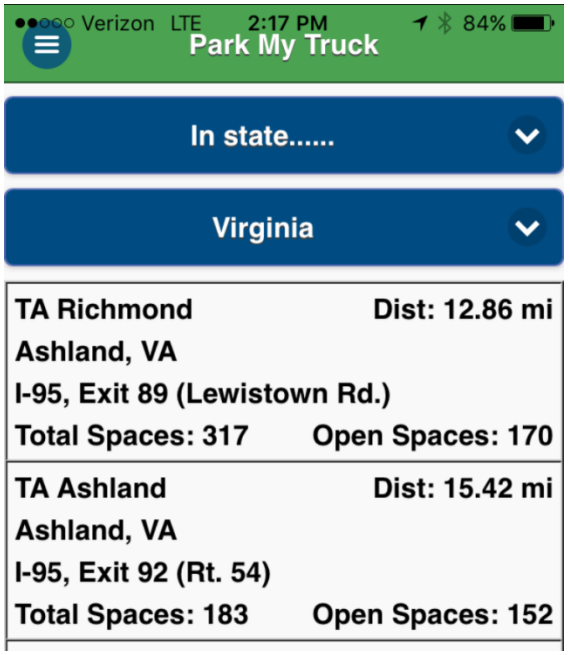
Satellite



Space count is different

Real-time truck parking info can be shared using various tools

- Using a dynamic parking sign in advance has mixed results.
  - A 2007 study by University of California, Berkley campus report driver's preferred the VMS method for receiving information
  - A 2017 study by American Transportation Research Institute (ATRI) report driver's prefer using apps/websites.



- 511 Virginia product suite (mobile app, website and phone)
- 3rd Party Applications (Park My Truck, Roadbreakers, Flying J, TA, etc.)

Developed a prioritized list based on truck volume and occupancy

RANK	Interstate Facility	SITE NAME	Number of Spaces	ADT (Trucks)	OCCUPANCY (24 hr)
1	81 SB	Troutville	7	**1499**	**892%**
2	81 SB	Smyth	6	**249**	**173%**
3	81 NB	Mt Sidney NB	14	**555**	**165%**
4	81 SB	Winchester	15	**499**	**139%**
5	81 SB	Mt Sidney SB	10	**332**	**138%**
6	77 NB	Lambsburg	14	**442**	**131%**
7	81 NB	Radford SB	14	**412**	**123%**
8	81 SB	Fairfield	10	**286**	**119%**
9	81 NB	Radford NB	14	**394**	**117%**
10	81 NB	New Market NB	19	**415**	**91%**
11	81 SB	New Market SB	16	**323**	**84%**
12	95 SB	Fredericksburg	23	**461**	**83%**
13	64 EB	Goochland EB	9	**176**	**82%**
14	95 NB	Ladysmith NB	40	**676**	**70%**
15	64 WB	Goochland WB	9	**148**	**68%**

Preliminary Cost Estimate Statewide Truck Parking Solution

Corridor	Sites	Spaces	Total Estimate
I-66	3	20	$384,188
I-81	11	190	$1,498,688
I-95	3	105	$469,187
Phase 1*	17	315	$2,352,063
I-64	6	76	$794,375
I-85	5	81	$681,313
I-77	3	79	$443,187
Phase 2	14	236	$1,918,875
Total	31	551	$4,220,937

Potential Cost Savings

- Not Using per space sensors $1,029,654
- Not Using dynamic parking signs $1,771,249

Implementation Plan for Phase 1

- Acquire parking system using existing ATMS Contract (Q-Free)
  - System operational – Summer 2017
- Install field devices (sensors & signs) using a No-plan RAAP construction contract
  - Complete Design by Summer 2017
  - Advertise contract in September 2017
  - Complete field installation by December 2018
- Integrate data into 511 Virginia suite (existing contract)
  - Complete integration of field devices by corridor (66, 81, and 95)
  - Share public parking information with NASTO
  - Post private space availability on 511 for real-time, accurate feeds
- Accelerate I-66 corridor using ITS On-Call Task Order for pilot field installations
  - Operational by Fall 2017
- Phase 1 funded by ITTF funds

Truck Parking System will provide operational and safety benefits

- Travel Time
  - Knowledge of space availability
  - Depletion of available hours of service
- Operating Cost
  - Improve freight delivery and reliability
  - Shipping time efficiency
- Safety
  - Eliminates fatigue
- Operation and Maintenance
  - Saves the cost of repairing shoulders and other roadways not built for CVO weights, which leads to pavement degradations
- Maximizes use of existing infrastructure, no new infrastructure needed