

Automated Capture of Freight Origin/Destination Data using License Plate Readers



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Center for Advanced Transportation Systems Simulation (CATSS)

University of Central Florida

- 1. Origin/Destination Data
- 2. Phase I
- 3. System Hardware
- 4. System Software



To utilize LPR technology for collecting O/D Data of Freight using highway gantry-mounted cameras.



O/D

When did it leave and from where? When did it arrive and to where?





ORIGIN - DESTINATION DATA

Planning

Intermodal

Design

Port Management

Congestion Pricing

Traffic

Maintenance

Average Speed

- Cargo Theft
- Enforcement





LARGE number of models is Available.

But where would the DATA come from?!



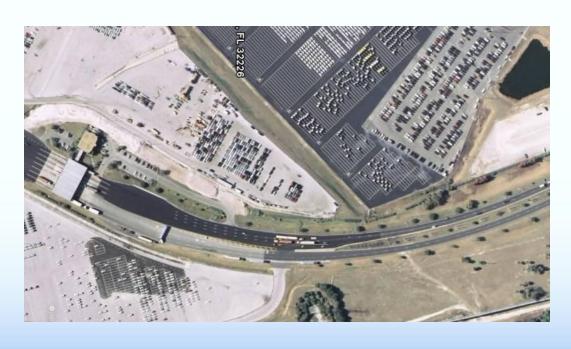
Getting

RELIABLE Origin/Destination Data is

Expensive and time consuming.



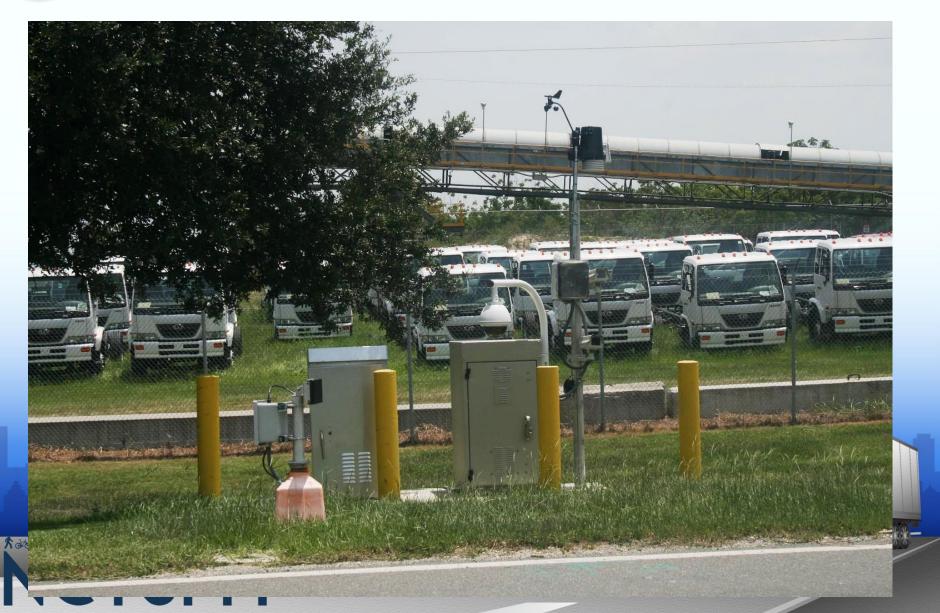












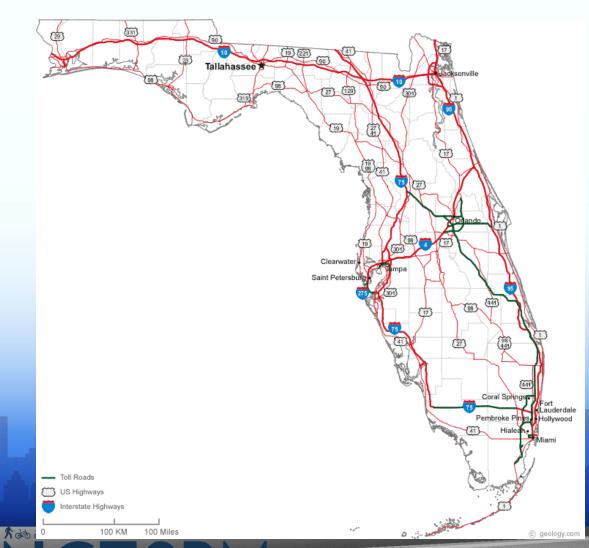


Phase I





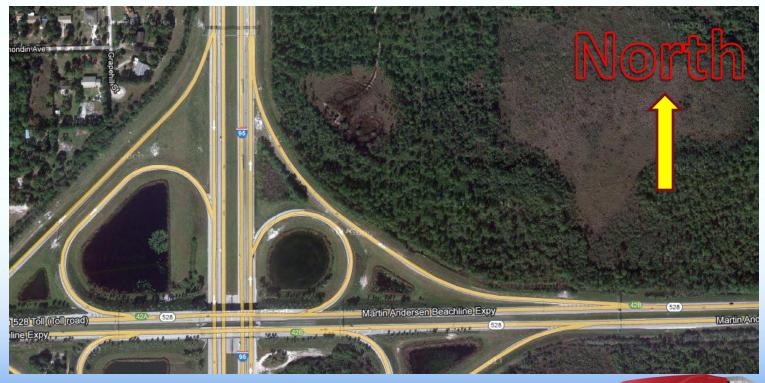
Installation















System Design Challenges

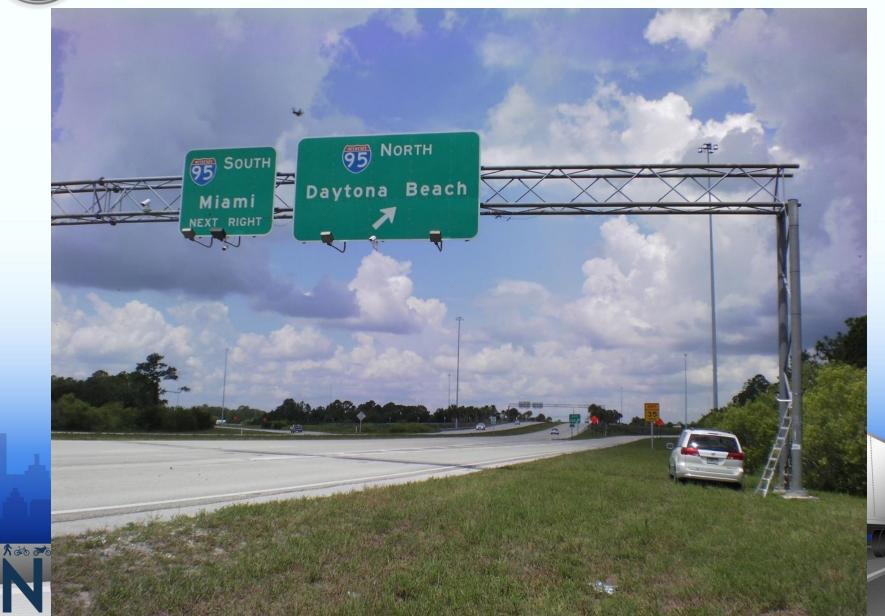
- 1. Selection of Camera Systems (light, resolution ..)
- 2. Selection of Triggering Mechanisms
- 3. Power Source
- 4. Software and acquisition speed
- 5. OCR Target: Plates, Container Numbers ...etc.
- 6. Safe connection to Gantries
- 7. Sign structure Issues







Gantry 1





7) Sign structure Issues





7) Safe connection to Gantries





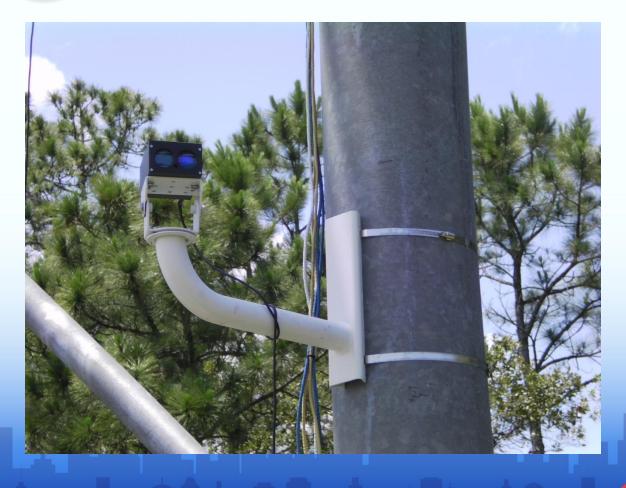












Image Acquisition



aaaaa2CN011112 711.jpg

412010612015833 412010612015833 412010612015833 75.jpg







912.jpg



913.jpg











98.jpg



aaaaa2CN021112



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77.jpg



78.jpg







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aaaaa2CN021112 212010611574833 212010611574833 99.jpg



aaaaa2CN021112 910.jpg



99.jpg



212010611574833

912.jpg

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aaaaa2CN021111

912010611563033

912.jpg



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95.jpg

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212010611574833

97.jpg

aaaaa2CN021112 212010611574833

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aaaaa2CN021112 aaaaa2CN021112



911.jpg





112010611573233

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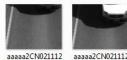
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913.jpg















99.jpg



710.jpg





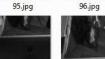
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512010611532833 95.jpg













Rear License-Plate Reading





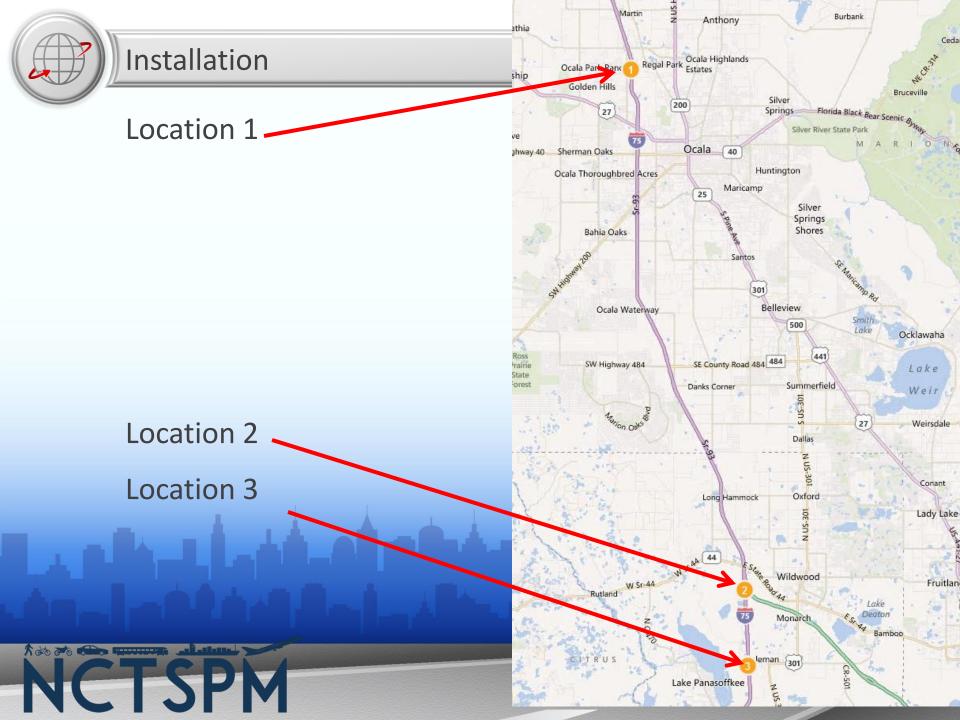
Rear License-Plate Problems

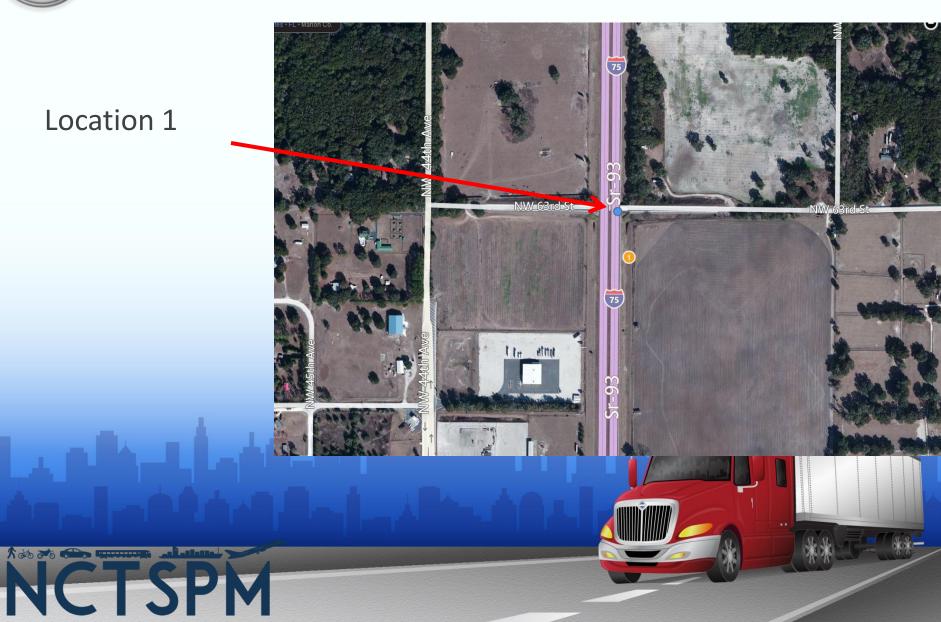


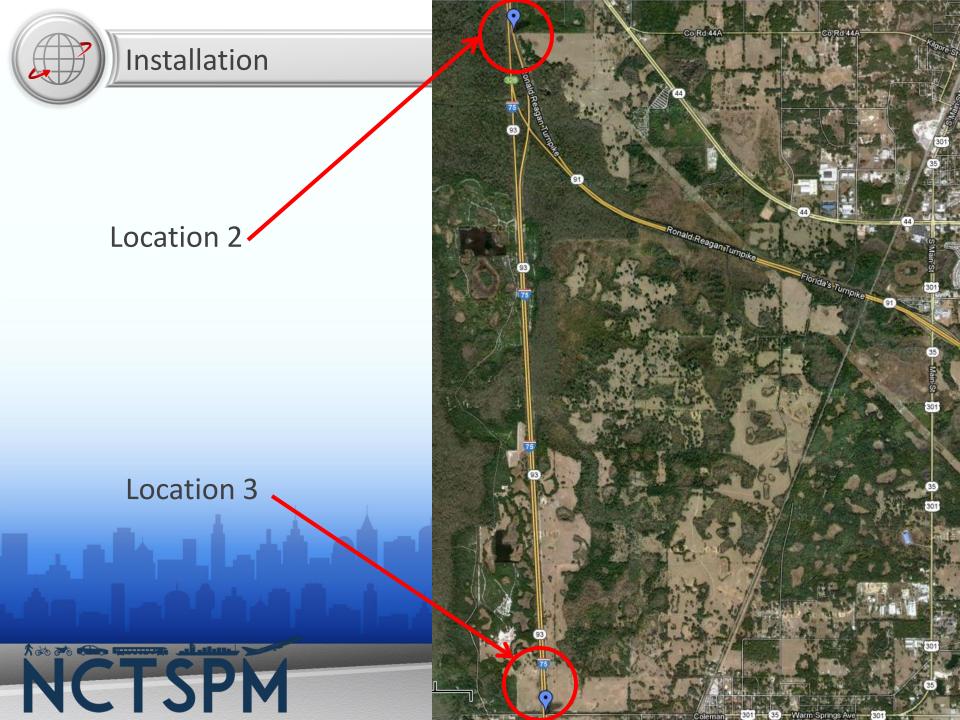


Rear License-Plate Problems









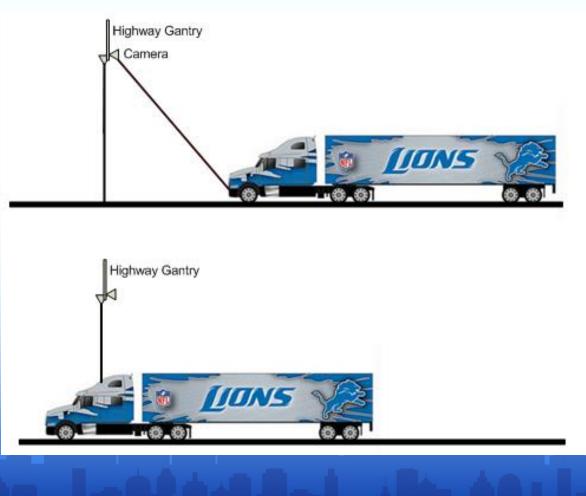








3) Triggering Technology







3) Triggering Technology



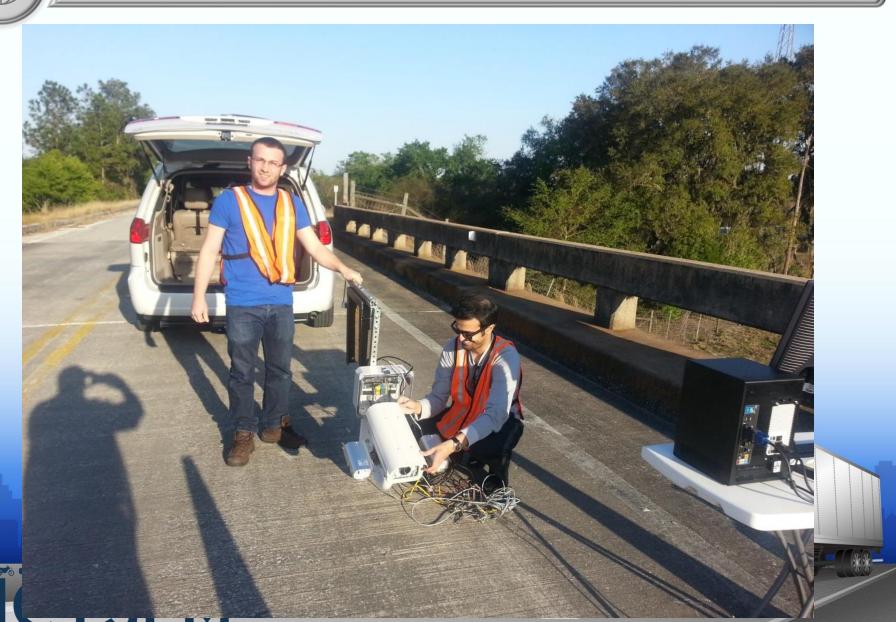






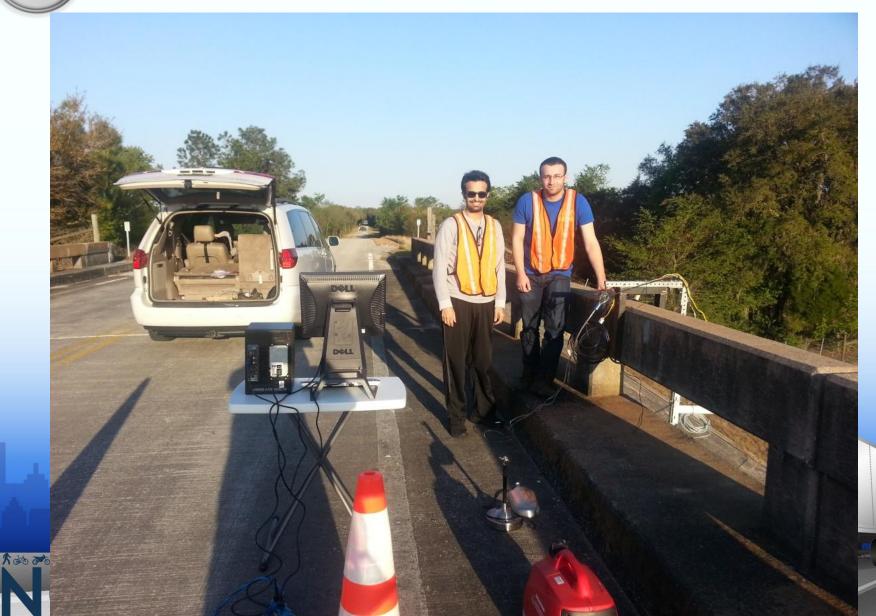


Installation

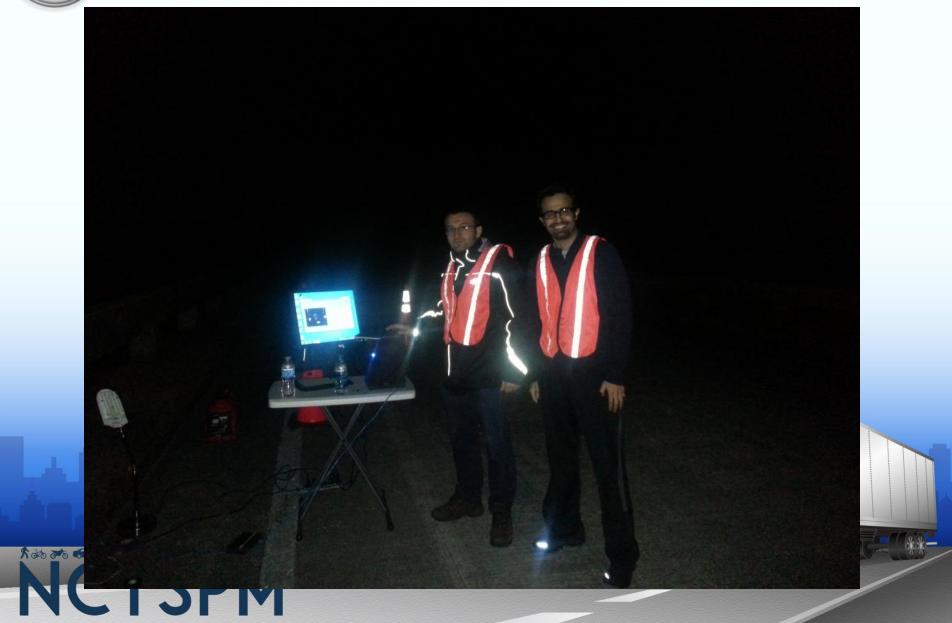




Installation

















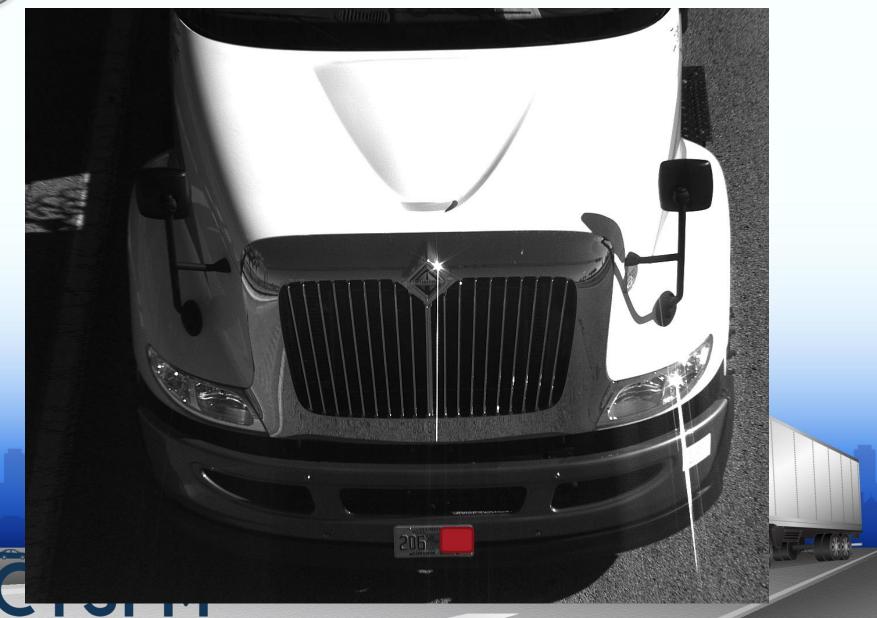
Field Test





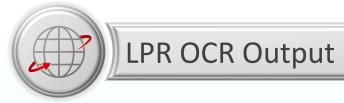


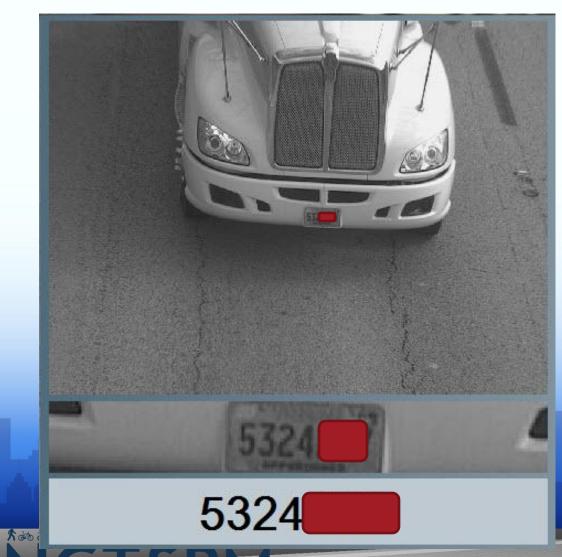
Sample Image – Latest Cameras













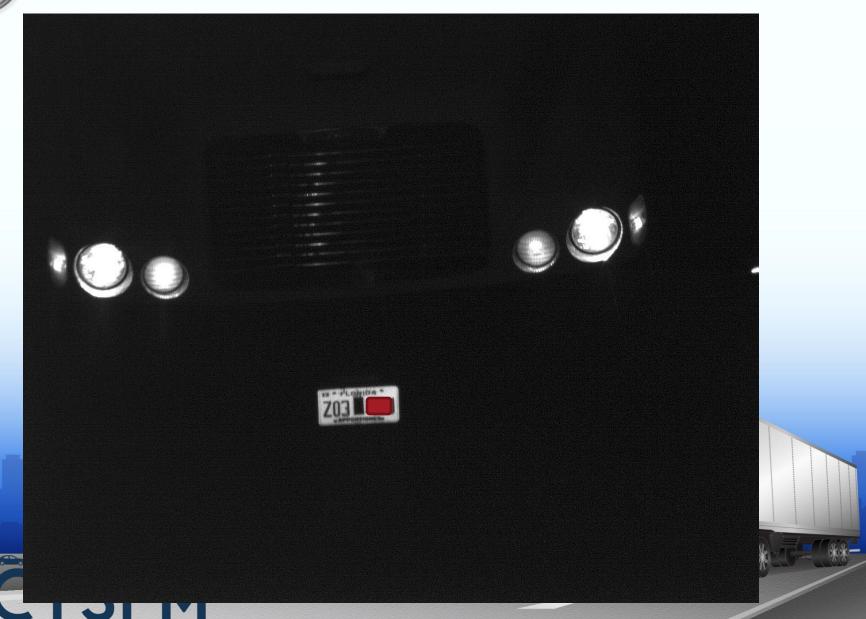


NIGHT READING





Night Reading



Solar Power



<u>Phase I</u> of this work was possible with the support of District Five and the Maintenance Office of Brevard.

The ongoing Phase II of this work would not have been possible without the sponsorship of FDOT's Research Office, the CATSS UTC, and the support of the Maintenance Offices of District Five's Ocala and Leesburg.



