INRIX Data Analysis of Traffic Signal Improvements

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Traffic Signals Subcommittee
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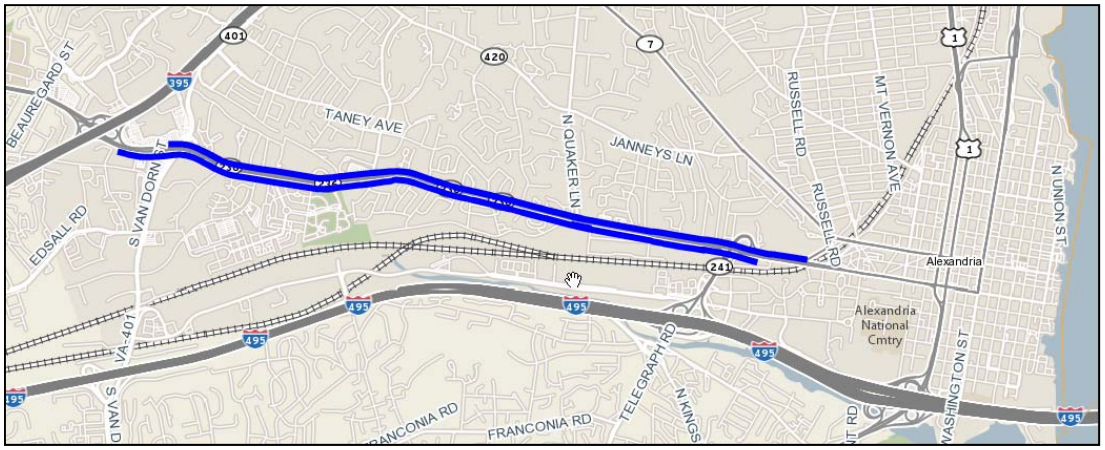
Overview

- Background
- Methodology
- Results
- Caveats
- Discussion

Background

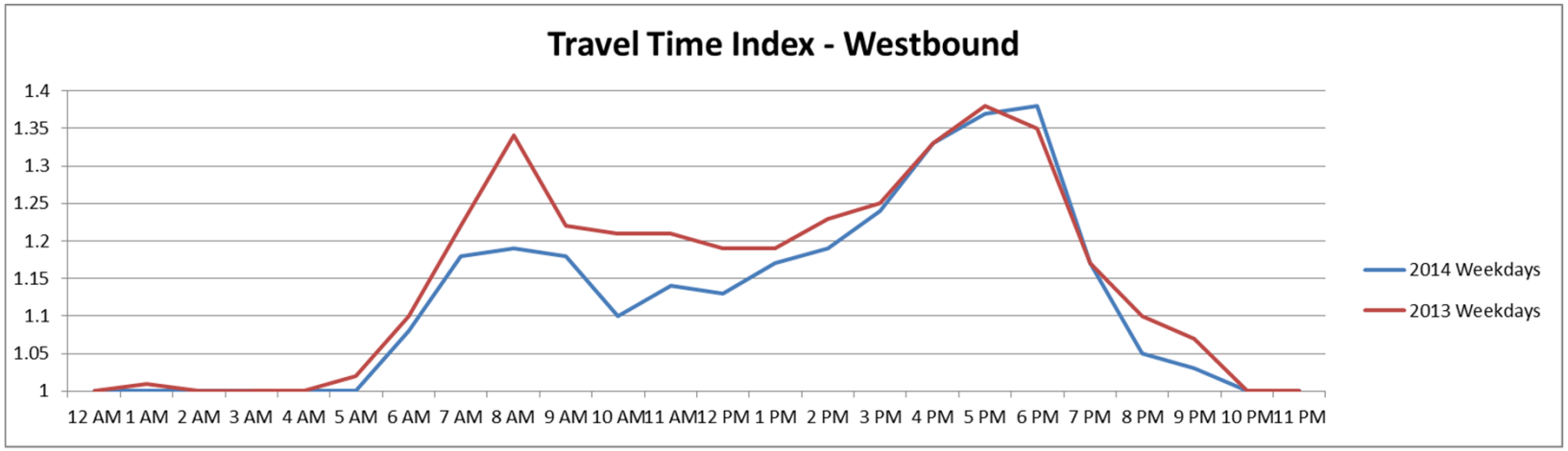
- City of Alexandria presentation on traffic responsive signal system
  - Improvement in detection and communication capabilities
  - Implementation of traffic responsive signal system along Duke Street
- Interest in examining the feasibility of using VPP data to evaluate the impacts of traffic signal system improvements

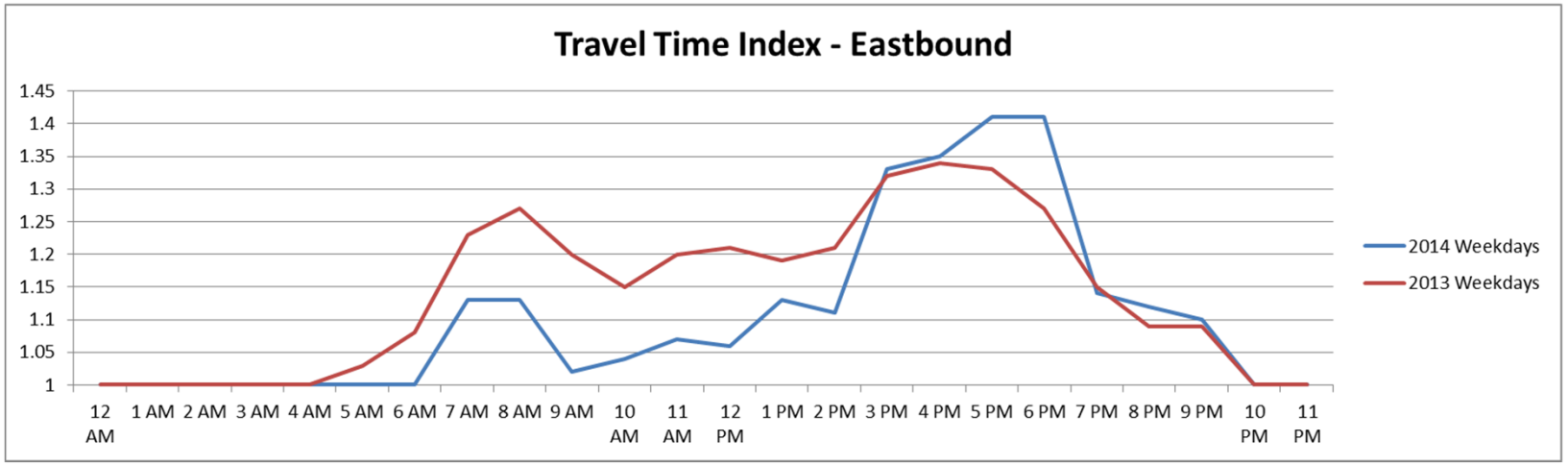


Methodology

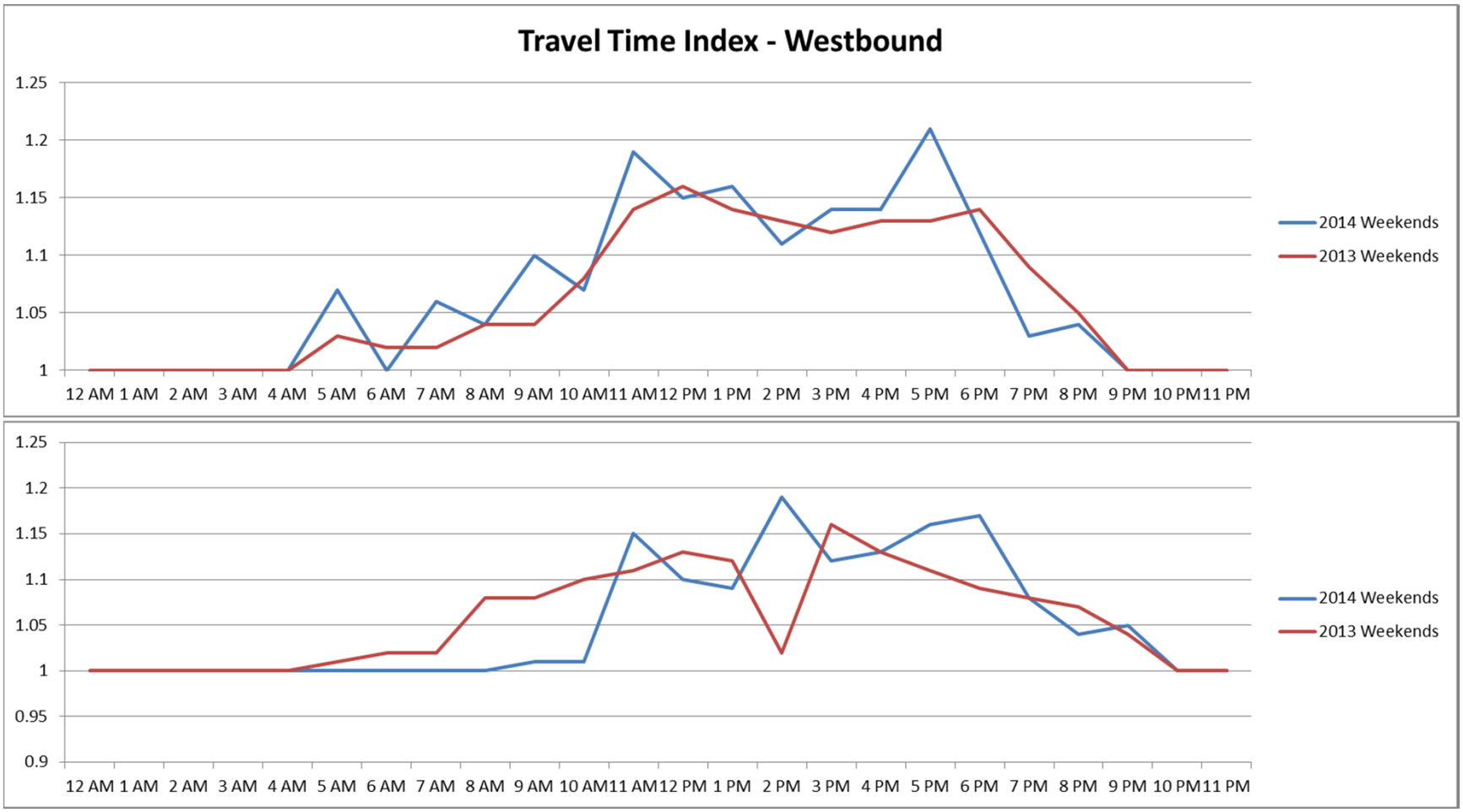
- Analysis based on VPP Suite features
  - Roadways limited to those where data is available
  - Limits based on TMCs
  - Use of VPP Suite reports – focused on TTI
- Coordinated with City of Alexandria staff on dates to ensure operability of traffic responsive system
  - System online as of October 30, 2014
  - Chose dates to avoid federal holidays
  - The week of November 17, 2014 was analyzed
  - The week of November 18, 2013 used as reference

Results - Weekdays





Results - Weekends

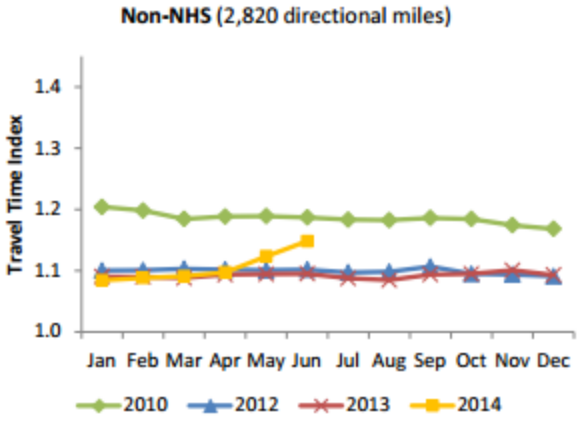


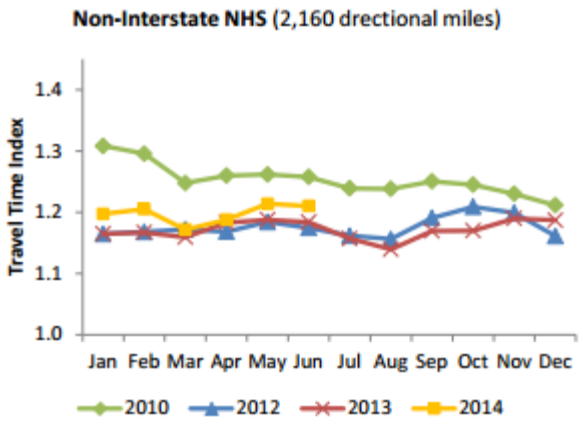
Observations

- Data source indicates a statistically significant improvement in travel times on weekdays – especially during AM peak and midday periods
- Mixed results during the PM peak period and on weekends
- There is promise in using these data to guide further investigation

Caveats

- INRIX data quality issues on arterials with oversaturated conditions
- Limits of corridors are determined by TMCs, and do not reflect actual limits of project
- Impact of project cannot be isolated from regional congestion trends
  - Arterial TTI for peak periods in the region increased from 1.31 to 1.36 between 2012 and 2014
- Although the data can be informative, it is still necessary to look at other data sources for validation





Discussion