



TIVP: Traffic Incident Visualization and Prediction

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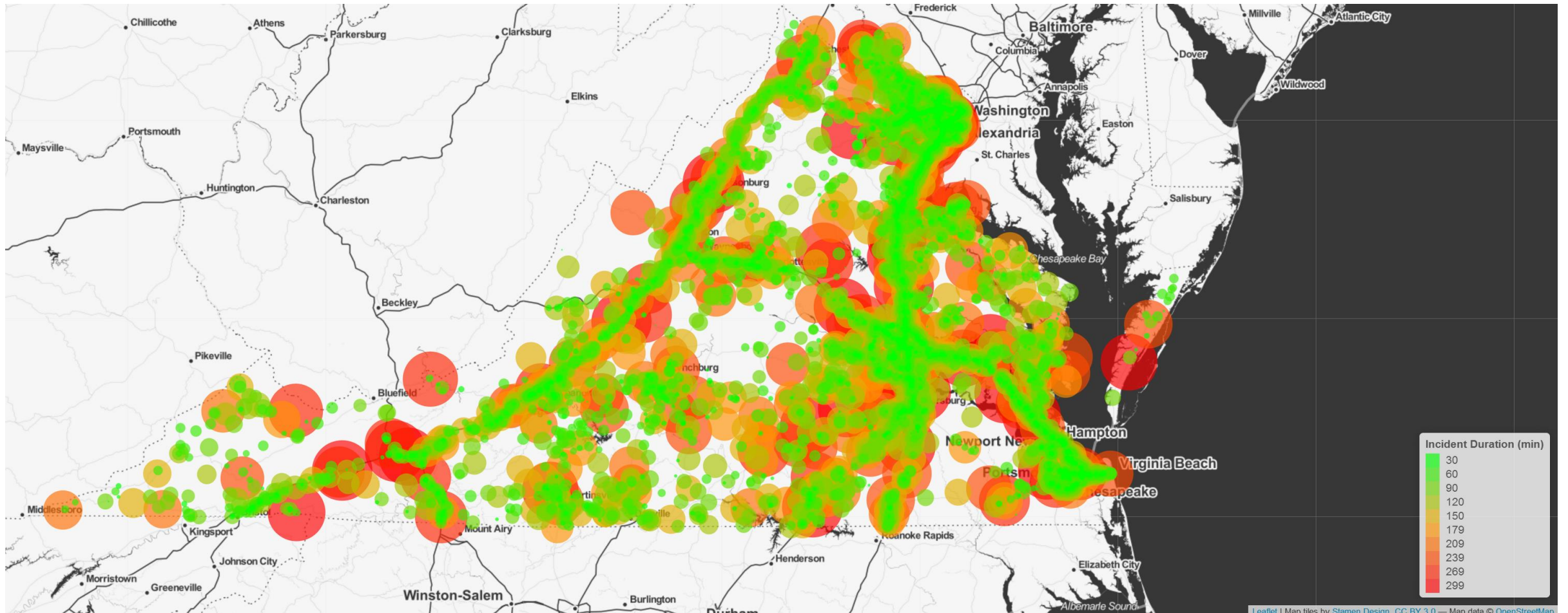
11/17/2017

Can You Imaging How Many Incidents Occur Daily?

- To answer this question, we have examined the real-time incident records from SmartRoads Data Portal:
 - Data collected in June, August, September, and October were analyzed
 - ✓ 12,498 disable vehicles!
 - ✓ 8,638 crashes!
 - ✓ ...
 - Data Issues: Not well structured; inconvenient to download,...
- Anyway, how will these incidents affect all of us?
 - Victims of the crashes/owner of the disabled vehicles
 - More congestions and secondary crashes
 - Expose rescue crew's lives in danger, and
 - ...

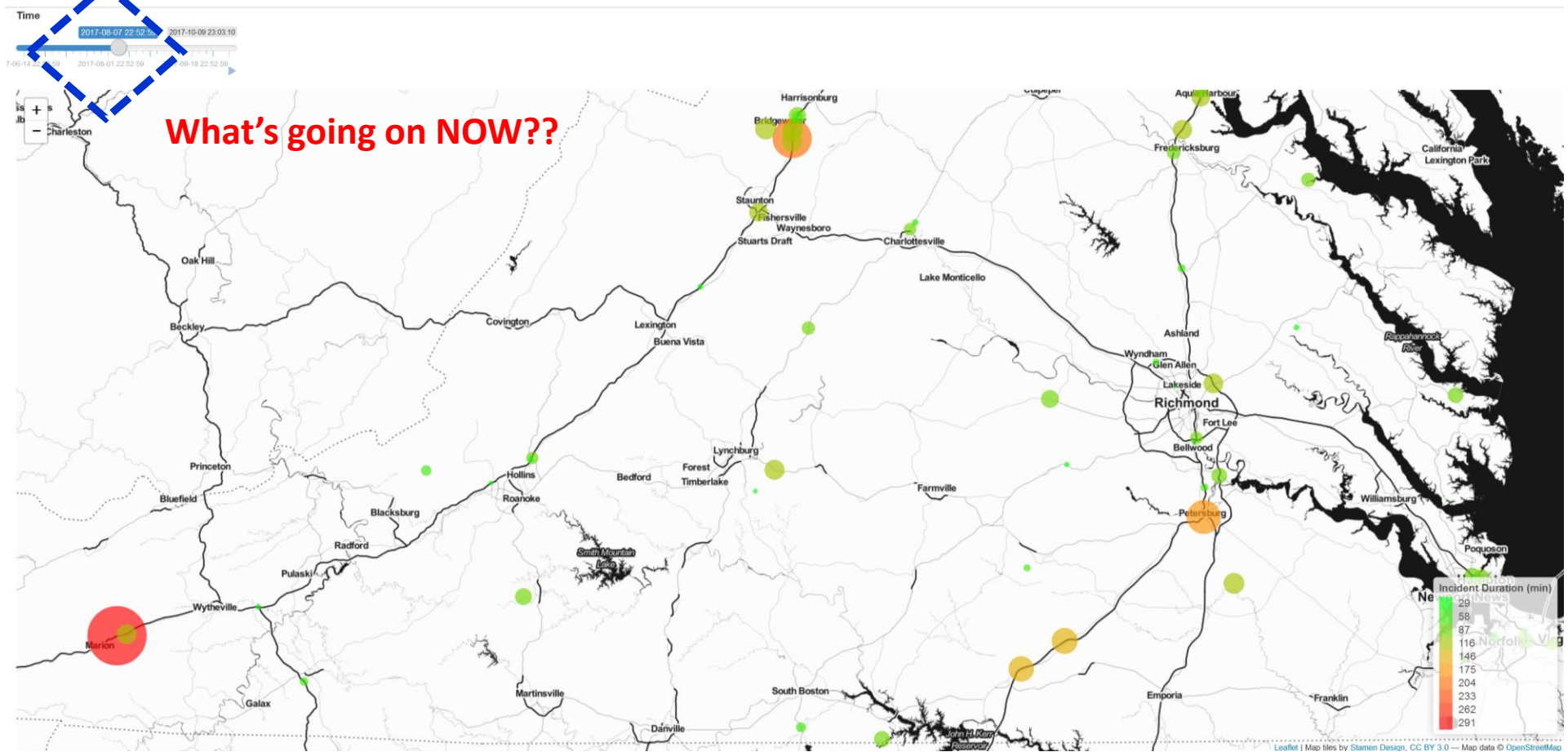
Our Mission: Learning from History and Prepare for Future

- Incidents shows certain characteristics:



TIVP: Our Team's Idea

- Develop a visualization platform to support transportation operators



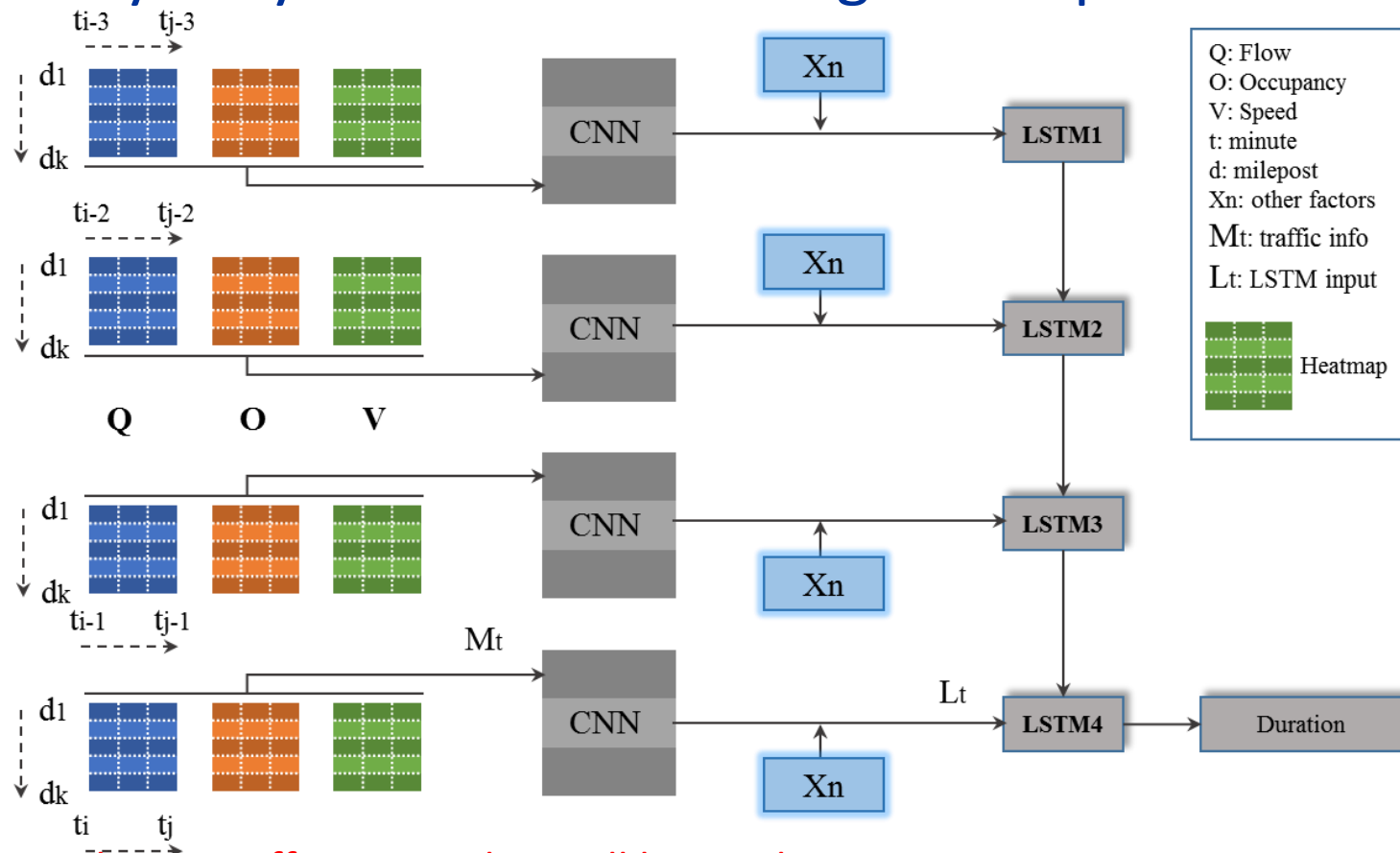
TIVP: Our Team's Idea

- Develop a predictive platform to support transportation operators



TIVP: Our Team's Idea

- Make Everybody Informed: Knowing the impact in advance



Machines are working smarter, why cannot we hire them to help us 😊

Seriously, can we?

The 1-minute real-time traffic sensor data will be used.

For Public: Let's Consider an Application Example

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VDOT Virginia Traffic Information

Download the free 511 mobile app for real-time traffic info. Download on the App Store ANDROID APP ON Google play

My 511 Map Views Text Views Resources Reach the Beach Northern Va. I-95/395 Contact Us Help

Weather Traffic Alerts Info Legend more info

Icon Layers

- Road Work
- Inactive Road Work
- Message Sign
- Travel Time Sign
- High Priority Incidents
- Other Incidents
- Rest Areas
- Open Bridges
- Special Events
- Weather Closures
- Other Weather Events
- Cameras
- Inactive Cameras
- Exit Numbers

I-495S at MM 46.0

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For Public: Let's Consider an Application Example

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VDOT Virginia Traffic Information

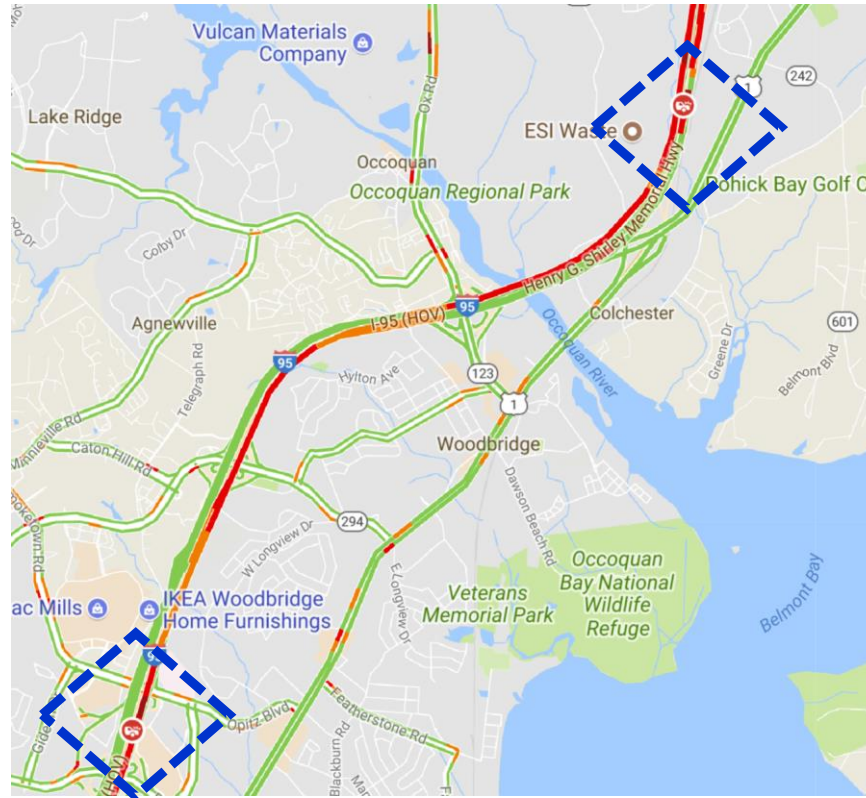
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Full Site > Main Menu > Incidents Table Site Search

Show 250 entries Search:

Update Time	Jurisdiction	Location	Description	Label
2017-11-17 13:47	Fairfax (County)	I-66W at MM 60.0 View on Map	On I-66 West at mile marker 60 in the County of Fairfax, motorists can expect major delays due to congestion. Traffic backups are approximately 2.0 miles.	Incident - Traffic - Congestion/Delay
2017-11-17 13:47	Chesapeake (City)	I-64 at High Rise Bridge View on Map	On I-64 in the City of Chesapeake, near High Rise Bridge, at High Rise Bridge, motorists can expect major delays due to a disabled vehicle. The west right shoulder is closed. Traffic backups are approximately 1.0 mile.	Incident - Traffic - Disabled Vehicle
2017-11-17 13:46	Henrico (County)	I-295S at MM 30.0 View on Map	On I-295 at mile marker 30 in the County of Henrico, motorists can expect delays due to a disabled vehicle. The South left lane and left center lane are closed.	Incident - Traffic - Disabled Vehicle
2017-11-17 13:46	Chesterfield (County)	VA-76E at Powhite Pkwy View on Map	On VA-76 (Powhite Pkwy) in the County of Chesterfield from the ramp to VA-288 to the ramp from VA-76, motorists can expect potential delays in this area from 11/17/17 at 1:45 PM until 11/17/17 at 4:30 PM due to paving operations. The east right lane and right shoulder are mobile closures.	Planned Event - WZ - Maintenance - Paving Operations
2017-11-17 13:45	Prince George (County)	VA-156S at Benjamin Harrison Bridge View on Map	On VA-156 in the County of Prince George, at Benjamin Harrison Bridge, motorists can expect delays due to a bridge/tunnel stoppage. All North lanes are closed. All South lanes are closed.	Incident - Traffic - Bridge/Tunnel Stoppage
2017-11-17 13:44	Arlington (County)	I-66E at MM 68.6 View on Map	On I-66 at mile marker 68.6 in the County of Arlington, motorists can expect potential delays due to a multi-vehicle accident. The east left shoulder and left lane are closed.	Incident - Traffic - Multi-Vehicle Accident
2017-11-17 13:43	Bland (County)	I-77S at MM 49.2 View on Map	On I-77 at mile marker 49.2 in the County of Bland, motorists can expect delays due to a tractor trailer accident. All South lanes are closed. Traffic backups are approximately 4.0 miles.	Incident - Traffic - Tractor Trailer Accident
2017-11-17 13:43	Norfolk (City)	On US-60W at 15th View View on Map	On US-60W at 15th View in the City of Norfolk, motorists can expect potential delays due to an incident. The west entrance ramp is closed. The 15th View gate is closed.	Incident - Traffic - Other Traffic

More guidance Pls. 😊



Same Crash or Different ones?

Looking Forward to Your Suggestions.



Thank you very much for time and comments!