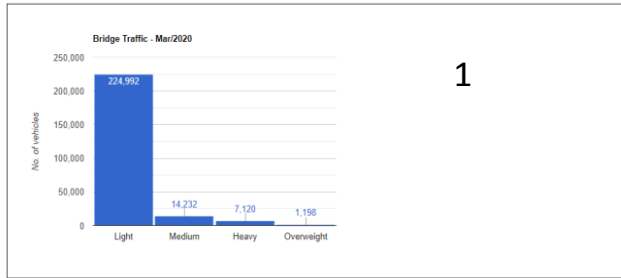


Primary Bridge Dashboard for -- Madison NY- RTE 5 / Chittenango Creek

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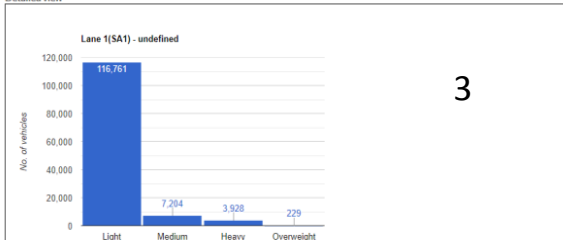


1

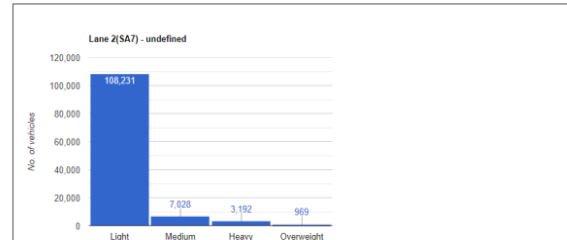
Month	Year	Light	Medium	Heavy	Overweight
March	2020	224992	14232	7120	1198
February	2020	241377	12942	5719	765
January	2020	169310	10749	4765	674
December	2019	210570	12704	5383	927
November	2019	111565	8259	3227	543
October	2019				
September	2019				
August	2019				
July	2019				
June	2019				
May	2019				
April	2019				

2

Detailed view



3



4

Chittenango Bridge-- NYS DOT

PROBLEM

A 1970 concrete – steel girder bridge with visual deck cracks and assumed highway fluids intrusion required analysis to determine if the structure could support an asphalt overlay without instituting a load restriction.

DECISION

NYS DOT implemented [IntelliStruct Bridge Performance Management Platform](#) on the Chittenango Bridge for structural monitoring, analysis with a digital twin and calibration of performance using live load testing to determine if they could rehabilitate the bridge with no restrictions. One of the analytics required is the monthly traffic usage of the bridge

ANALYSIS

Utilizing the outside girders strain data for each lane of this 2-lane bridge with filtering and calibration from the live load test, a monthly usage is analyzed using big data analysis and calibrated for each vehicle class. The data is sorted by indicated weight into light, medium, heavy and overweight vehicles. One of the requirements is to determine the amount and type of vehicles that use the bridge. The analytic is displayed for each bridge in the user interface of IntelliStruct. Histogram 1 shows the traffic distribution for both lanes of the bridge. Table 2 is a chart that displays the monthly traffic distribution for the entire year that is updated with new calculations monthly. Histograms 3 and 4 shows the traffic distribution on each of the individual lanes on this 2-lane bridge.

RESULTS

The traffic usage indication analytic was combined with other bridge analytics such as measured load distribution for reviewing the load rating of the bridge. The bridge was modeled using a Digital Twin and the addition of an asphalt membrane was simulated. Indication from measured performance analytics is that the bridge can be rehabilitated with no restriction and will result in extended bridge life

Continuous monitoring will allow traffic usage to be analyzed monthly and compared over a year and determine seasonal variation. Also review bridge performance over time to assure high performance.