

Background:

Washington County is Oregon's second most populous county, responsible for approximately 1,306 miles of roadway, 300 signals, and 200 flashing beacons. It's common for traffic operations agencies to listen to public feedback and prioritize work based on the grievances of their citizens, and Washington County is no exception. In fiscal year 2018-2019, the county had acted on some 1,155 customer-initiated requests for road service.

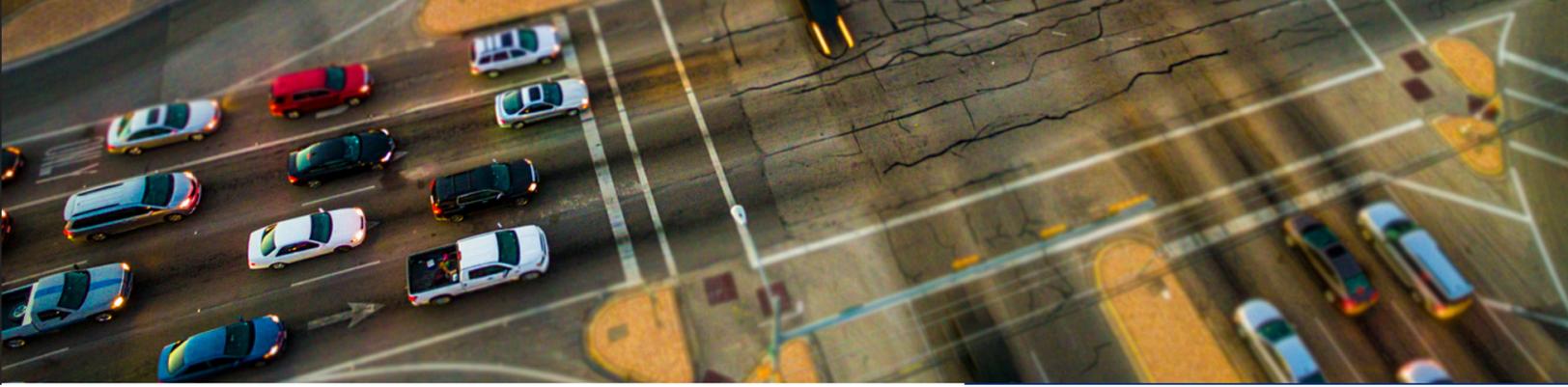
The Problem: 65th Avenue Corridor

One such request originated from a particularly troublesome corridor off Interstate 5 along 65th Avenue near Meridian Park Hospital. This corridor had quickly become a source of frustration for commuters—especially in the evening hours. “It wasn't something that was on our radar screen, because the times that we had been out there or watched it on cameras it looked fairly balanced,” recalled Shaun Quayle, traffic engineer for Washington County.

According to one commuter driving in from Beaverton, the entire trip down the 8-mile span of I-5 from that city took less time than traversing the 0.9 miles of the corridor in question. This was a clear indication that the signal timing was failing and warranted action.

Key Points

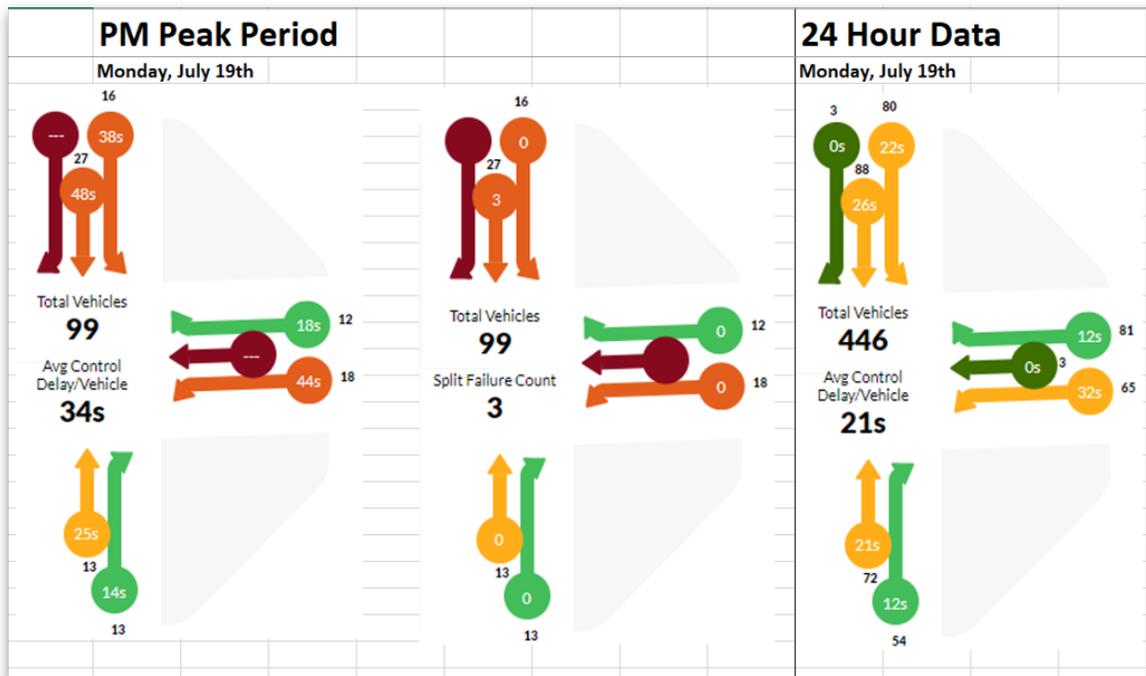
- Washington County had an issue that had gone unnoticed by their existing network observation mechanisms
- Washington County used Signal Analytics to corroborate a customer complaint about the 65th Avenue corridor
- Washington County used Signal Analytics to conduct performance analysis which inspired an immediate signal retiming project
- After the field operation concluded, Washington County used Signal Analytics to conduct a before-after performance comparison
- Washington County realized a notable reduction in control delay and split time failure count, and was able to produce these metrics with fewer processes



The Approach: INRIX Signal Analytics for Signal Performance Analysis

INRIX Signal Analytics utilizes vehicle probe data to map road networks virtually, providing rich insights into the performance of traffic signals. This allows traffic operations managers to identify issues throughout their networks without reliance on traditional methods of data gathering and analysis, which are typically accomplished by means of physical hardware or conducting operations in the field. “When we dug into the INRIX data set it showed what we were seeing on the camera the day we got the citizen complaint,” Quayle explained. “We were able to revisit it and do some signal retiming.”

Using Signal Analytics, Washington County observed the control delay and split time failures of the series of signals along the 65th Avenue corridor, thereby providing a clear sense of how the signal timing plan should be adjusted.



Signal Analytics Dashboard Visualizes Performance Metrics For Easy Analysis





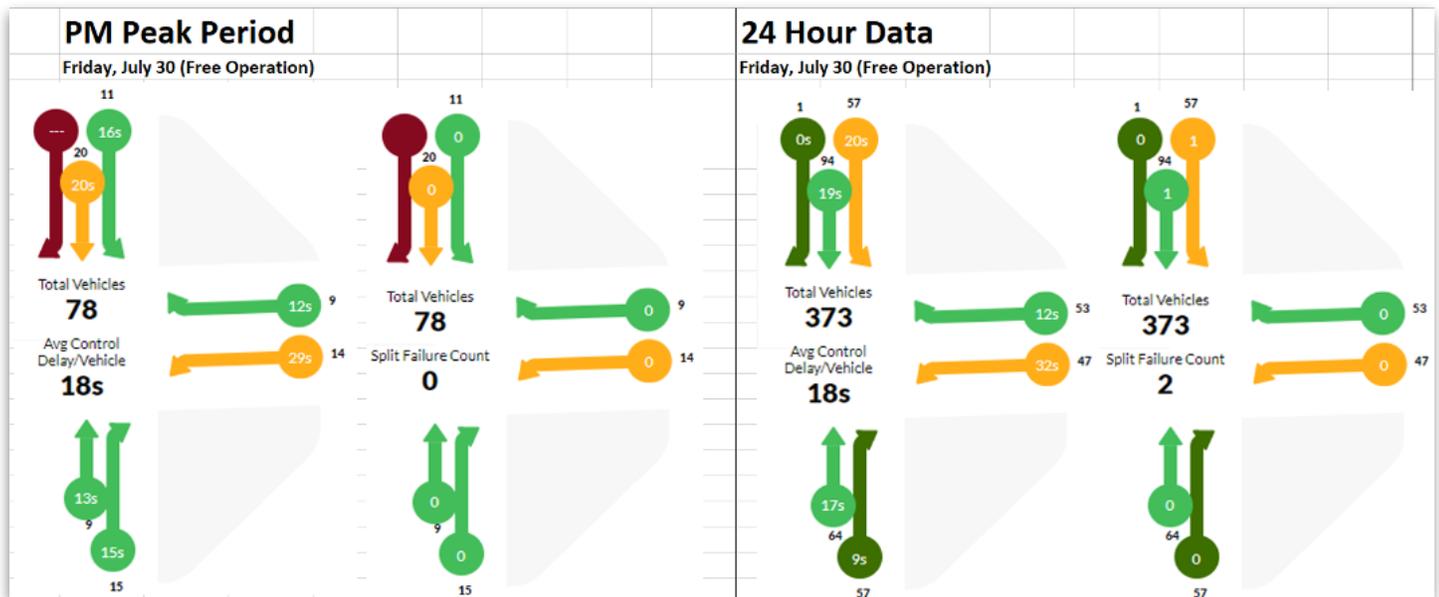
The Results:

Once the changes were implemented, Washington County observed immediate improvement along the 65th Avenue corridor. “We used the INRIX Daily Reports [...] to compare immediately before and immediately after the timing plan change,” said Quayle.

Signal Analytics provides daily reports of traffic signal performance, meaning agencies like Washington County can perform before-after analyses from the traffic operations center without having to schedule additional time in the field. In the case of the 65th Avenue corridor, the retiming effort reduced average control delay by 30% and split failure counts by 21%.

“We found the tool really handy in addressing a signal timing problem in the field. We were able to use the INRIX data to show a 30% reduction in delay by taking two signals out of coordination and letting them run free at all times.”

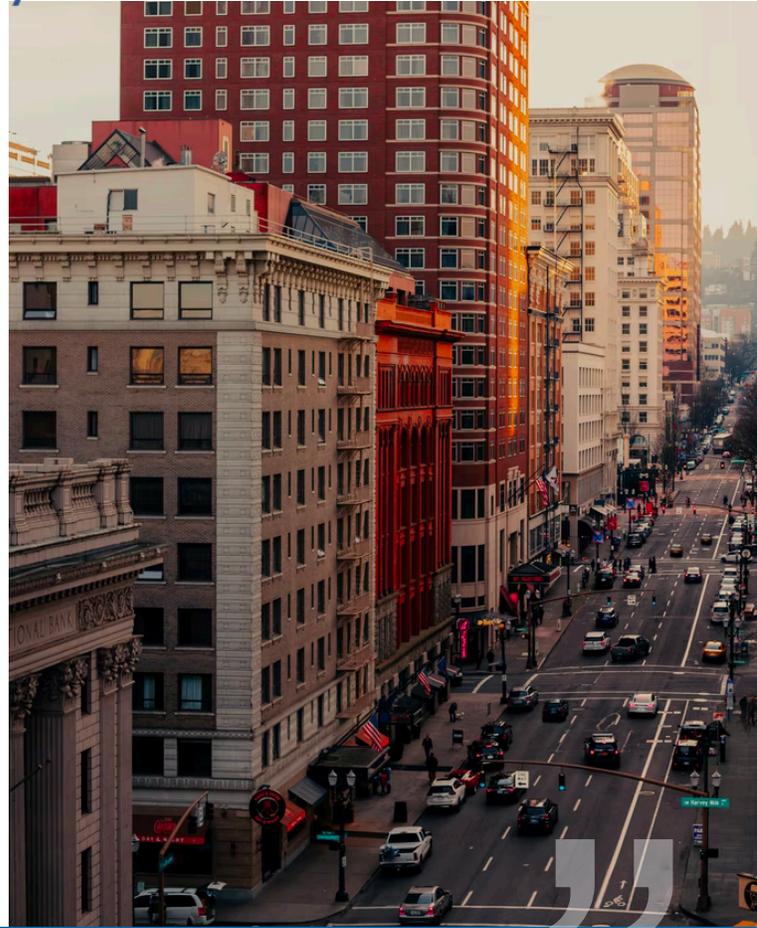
Shaun Quayle,
Traffic Engineer for Washington County



Next Steps:

Agencies that embrace vehicle probe solutions can expect to realize faster results with fewer processes. With Signal Analytics added to Washington County's toolbox, the agency will continue to see network improvement comparable to the instance of the 65th Avenue corridor.

In this specific instance, Signal Analytics empowered Washington County to identify and analyze an issue that had managed to elude traffic engineers, but its value expands beyond that. The agency now has the means to maintain high-level awareness of signal performance across its entire network, reducing reliance on public feedback to identify network issues. This enables a more proactive strategy for maintenance and retiming projects, meaning the agency can direct their efforts toward emerging problems before they become major sources of public frustration.



Summary:

Washington County used INRIX Signal Analytics to identify a serious signal performance issue that had eluded their existing observation mechanisms. After a thorough analysis using Signal Analytics, the agency took corrective action and observed the results immediately through the INRIX platform. Moving forward, Washington County will continue to benefit from Signal Analytics in the following ways: metrics with fewer processes

- Maintain high-level awareness of traffic signal performance across the entire network
- Analyze the performance of a signaled intersection before and after a retiming project – all without having to leave the office
- Identify emerging issues before they become major sources of public frustration, especially in areas outside of existing networked ATSPM systems
- No need for additional hardware to access rich insights into network performance

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