

# Congestion Management QuickView Guide

To keep traffic flowing and ensure high-quality transportation for all road users, data-informed congestion management is critical. But region-wide data collection is costly and time-consuming, delaying much-needed improvements. Geographic coverage via traditional methodologies is also oftentimes limited.

**StreetLight's Congestion Management solution speeds up project prioritization, planning, and implementation with two powerful tools:**

1. **Congestion Management QuickView** provides a region-wide scan of congestion trends across an entire region to identify critical hotspots and pinpoint areas for prioritization.
2. **Segment Analysis** goes deeper and analyzes granular roadway data to enact meaningful mitigation strategies on key geographies or roadways.

## CHALLENGE: Relieve congestion for more efficient, equitable, and sustainable roadways.



Collecting comprehensive, reliable data on regional congestion can take months, draining agency resources.

Most local road segments lack permanent traffic counters, and manual counts and surveys only capture a brief moment in time.



### SOLUTION

Congestion Management QuickView provides at-scale analysis for your whole region.

Segment Analysis delivers granular congestion metrics by hour of day, day of week, or season to give you deep insights on key road segments.

Use this comprehensive guide coupled with real-world examples to effectively utilize Congestion Management QuickView for your projects.

## Visualize and Share Actionable Regional Congestion Insights in Just a Few Clicks

With quick access to key congestion and reliability performance measures like Travel Time Index and Reliability Factor, Congestion Management QuickView delivers impactful macro-level insights that help you quickly assess real traffic conditions for an entire city, county, or census tract.

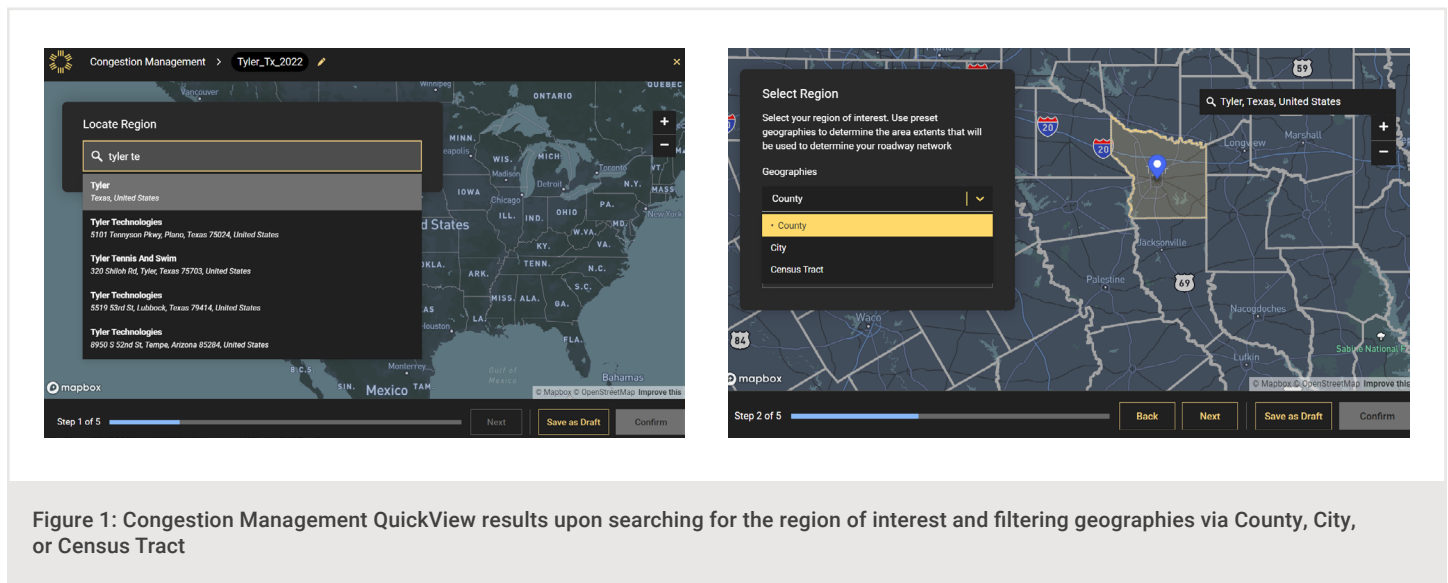
- ✓ Save time with easy analysis set-up, no GIS skills required.
- ✓ Quickly compare congestion trends for counties, cities, or census tracts.
- ✓ Access shareable summarized results and visualizations to keep stakeholders and the public informed.
- ✓ Compare regional congestion trends to prioritize projects and justify investments.

# Congestion Management QuickView in Action

Setting up a Congestion Management QuickView analysis is simple and intuitive. Head into StreetLight InSight® to follow these steps to get congestion trends for your region. Here's how we created one for Tyler, Texas.

## 1) Selecting the region

Tyler, Texas, is a mid-sized MPO with an East-West interstate (I-20) and other major corridors running through its central business district. The Congestion Management QuickView helps mid-sized MPOs (and other agencies) access high-level insights that would be challenging to gather manually.



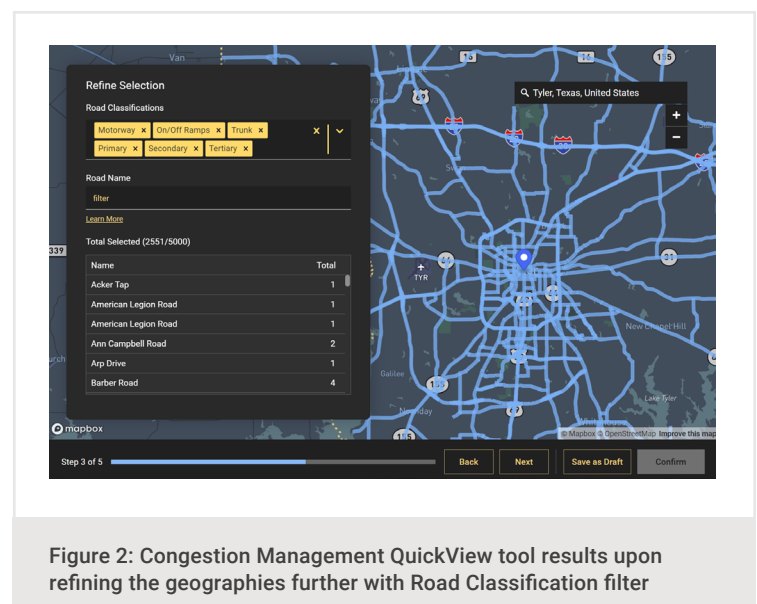
## 2) Selecting road classifications

For a broad look at city-wide congestion trends, motorways, on/off ramps, trunks, primary, secondary, and tertiary roadways are all included in our analysis.

Each road classification can be analyzed individually or grouped with other road types to refine the scope of analysis and compare congestion trends across different road types.

## 3) Selecting the data period

Choose from available data periods to understand how congestion has changed for your region.



## 4) Reviewing your results

StreetLight's Congestion Management QuickView provides various performance reliability measures, including travel time index, planning time index, unreliable segments, volume, speed, delay hours, and VMT. These metrics can provide insights at the segment, city, county, or census tract level to make informed investment and project prioritization decisions.

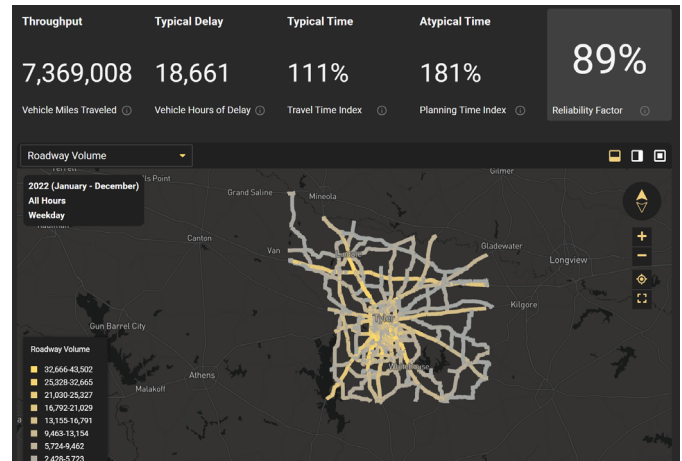


Figure 3: Key congestion metrics summarizing congestion trends in Tyler, Texas

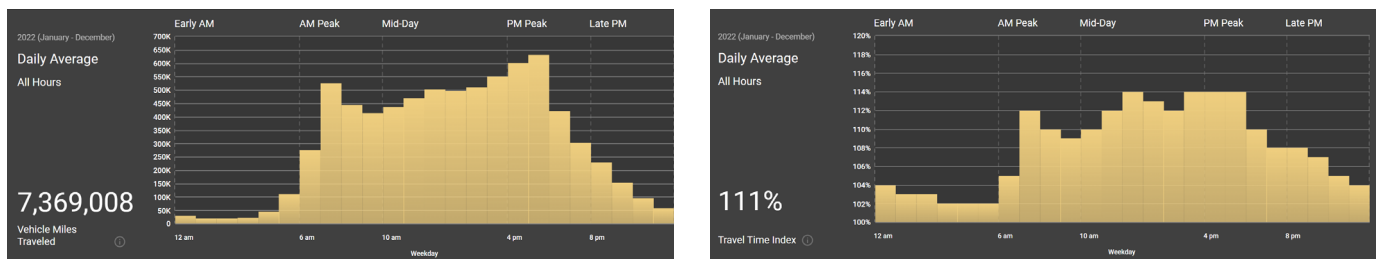


Figure 4: Congestion Management QuickView reveals the daily average (all hours) for Vehicles Miles Traveled and Travel Time Index in Tyler, Texas

### With these parameters selected, we reveal a few key insights for Tyler, Texas:

- ④ The traffic in the region follows **typical patterns of morning and evening** peak hours.
- ④ With a reliability factor of 89%, most miles of roadway in Tyler have consistent travel times, but **11% have higher variability**.
- ④ A travel time index (TTI) of 111% reveals that **trips take 11% longer to complete** during average conditions compared to free-flow speeds.
  - For example, a 30-minute trip takes about 33 minutes to complete.
- ④ A planning time index (PTI) of 181% shows that when congestion is at its worst (the 95th percentile travel time), **trips take 81% longer to complete** compared to free-flow conditions.
  - This means a 30-minute trip would take over 54 minutes to complete during the worst traffic conditions.



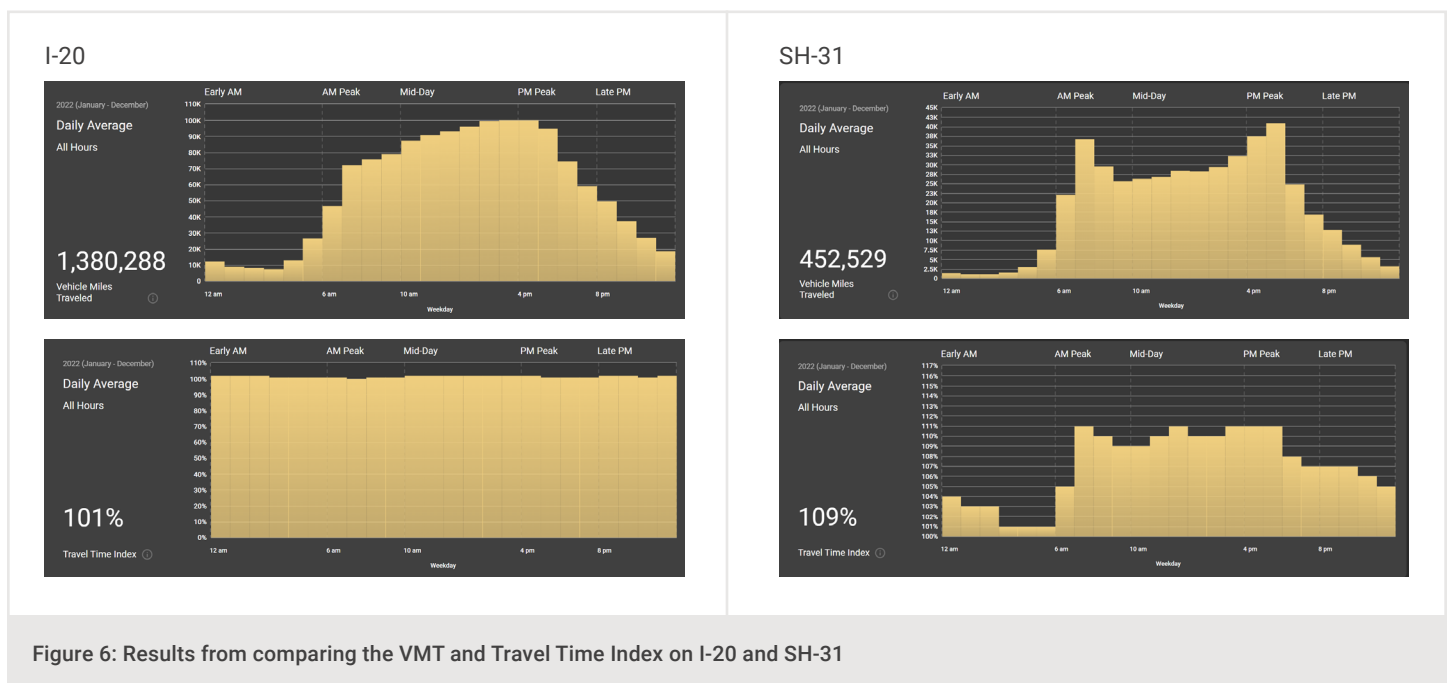
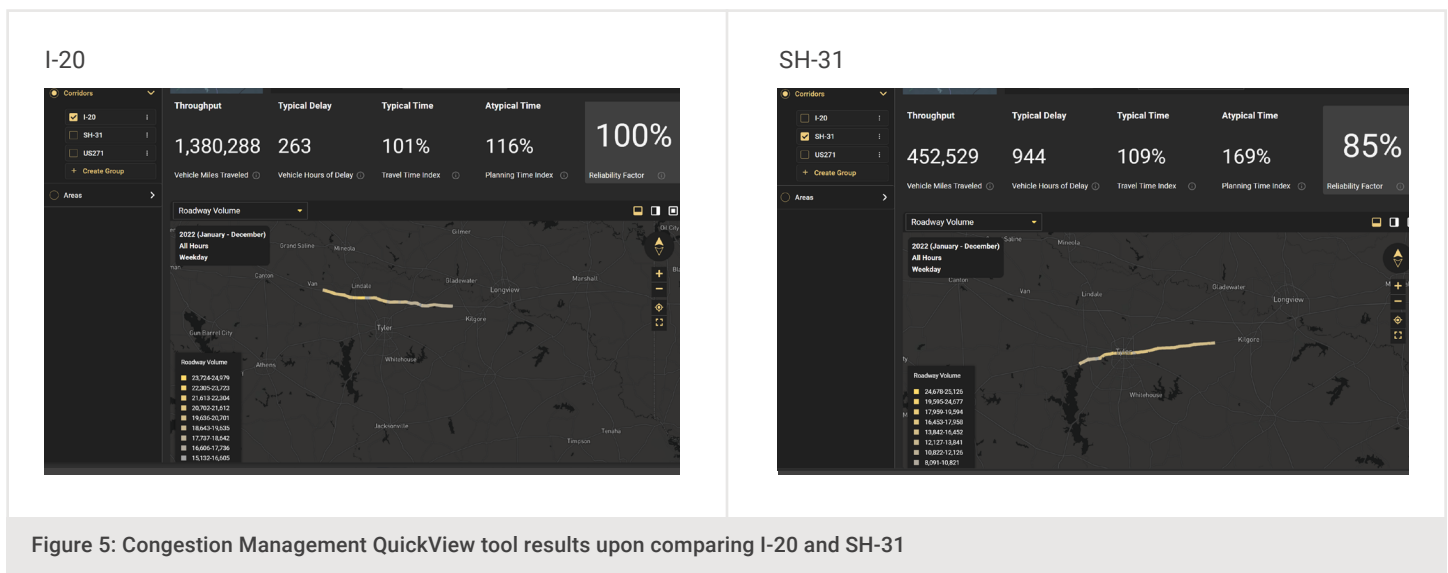
These results suggest that **congestion in Tyler, Texas, is moderate**. These **11% of roadways with high-variability** warrant further investigation with the most potential for improvement.

## 5) Comparing geographies

Congestion Management QuickView can be used to prioritize specific corridors or segments in Tyler, Texas, for further planning or investment.

One way to do this is by using the road classification filter to analyze specific road types. For example, by comparing primary roadways to secondary and tertiary roadways, we can begin to see how congestion impacts MPO residents versus regional and long-distance traffic.

Another option is to select specific corridors for analysis. In our example, we used the QuickView tool to develop a corridor filter for Interstate 20 and State Highway 31, which runs adjacent to I-20 but through the city's central business district and connects to major recreational centers, including Lake Palestine, known for its bass and crappie fishing.



## Comparing these two corridors generates new insights:

- ④ I-20 has an hourly profile typical of rural interregional corridors” instead of “similar peak traffic periods.
- ④ I-20 has lower congestion levels than the region as a whole.
- ④ State Highway 31 has congestion levels similar to the region, but significantly higher Vehicle Hours of Delay than I-20.



Based on these results, we discover that I-20 may have some capacity that can be utilized for traffic diversion.

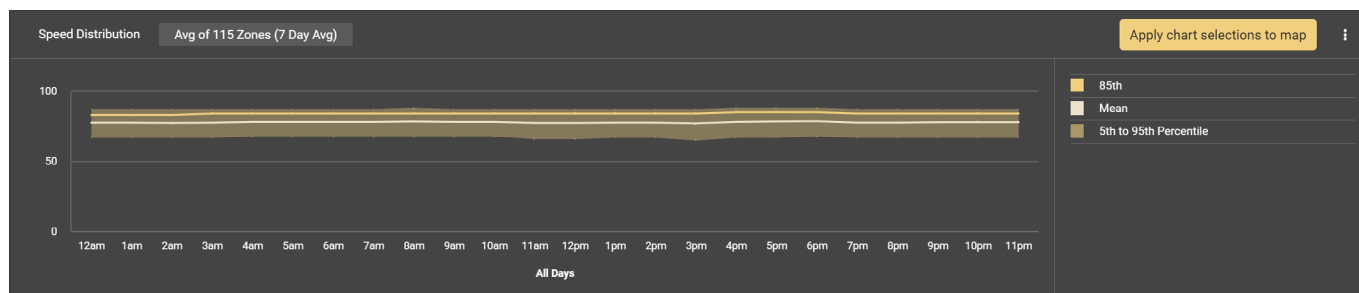
Similar to the analysis above, an agency can easily set up analyses for their city, county, or region within minutes and measure their network reliability regularly without sending staff to the field for data collection.

## Enhancing QuickView Outcomes by Utilizing StreetLight’s Advanced Analyses

StreetLight’s advanced analyses, including Top Routes, Segment Analysis, and Origin-Destination Analysis, can help zoom in further on these routes to either validate hypotheses or access more granular insights, such as custom zones and seasonal trends.

Here we performed Segment Analysis in StreetLight InSight® platform to drill into details of the performance of each route, I-20 and SH-31, on a segment-by-segment basis by reviewing Volume, Speed, and Delay profiles.

### Speed Profile for I-20



### Speed Profile for SH-31

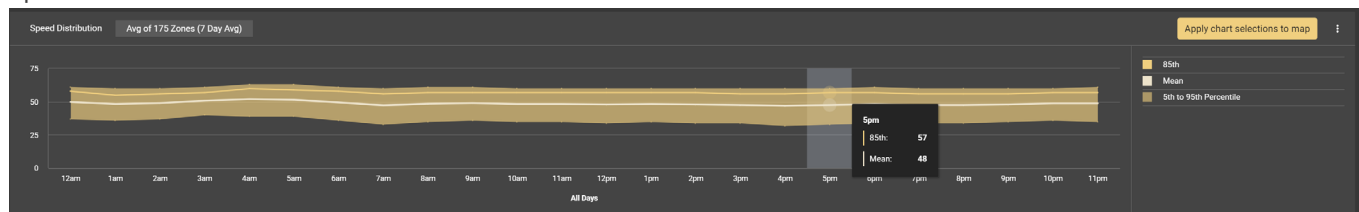
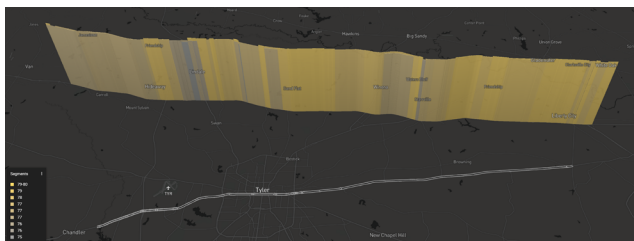


Figure 7: StreetLight Segment Analyses highlights more detailed Speed profiles on each subsegment of the corridors.

I-20 Delay



SH1 Delay

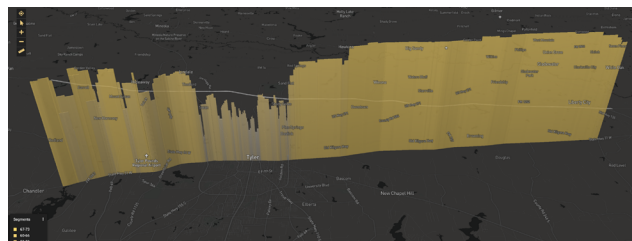


Figure 8: StreetLight Segment Analyses highlights more detailed Delay profiles on each subsegment of the corridors.

## Next steps for planning, prioritization, and public outreach

With top-level insights in hand, the Tyler MPO now has actionable information they can use to:

- Run more QuickView analyses to see which corridors have the worst congestion trends.
- Share direct links to QuickView visualizations to get stakeholders and public buy-in on congestion mitigation efforts.
- Inform Congestion Management Plans (CMP), existing conditions reports, and annual reporting.
- Establish a regional baseline against which future performance can be compared.
- Identify high-variability corridors that warrant more granular Segment Analyses to review Volume, Speed, delay profiles, or seasonal trends.
- Perform more advanced analyses in StreetLight InSight® to understand how rerouting traffic from major corridors would impact congestion on nearby roads.

The setup for Congestion Management QuickView and Segment Analysis can take anywhere between a few minutes to a few hours, depending on the complexity of the region. With less than a day to set up, we are able to perform a complex traffic and route study, saving months of time, cost, and resources while ensuring staff safety.

## Get Started on Congestion

To learn more about our [Congestion Management Solution](#), including Congestion Management QuickView and Segment Analysis, [schedule an in-platform demo today.](#)

Contact your sales representative to learn more,  
or email us at [INFO@STREETLIGHTDATA.COM](mailto:INFO@STREETLIGHTDATA.COM).

