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SRPEDD CONGESTION MANAGEMENT PLAN

SOUTHEASTERN REGIONAL PLANNING AND ECONOMIC DEVELOPMENT DISTRICT
88 BROADWAY TAUNTON, MA 02780

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Introduction

Congestion Management refers to the systematic process for managing congestion on all aspects of the transportation system with the principal goal of alleviating existing or preventing future congestion, thereby enhancing the mobility of people and goods. It includes procedures to monitor the transportation system's performance, identify causes of congestion, evaluate alternative actions, implement cost-effective strategies, and determine the effectiveness of those strategies.

Vehicles that are excessively delayed by traffic congestion operate less efficiently by wasting fuel and expelling greenhouse gases into the air we breathe. Continual and regular congestion increases the overall carbon footprint of the SRPEDD region all while adversely impacting air quality. It is important to alleviate congestion issues to provide an effective transportation network that maintains safety and reduces greenhouse gas emissions.

Additionally, development patterns may influence roadway user behavior and choices. For instance, a roadway with no sidewalks, bike lanes, or transit service does not encourage users to travel along the roadway in anything other than a personal automobile or rideshare service. In addition to facilities for all types of roadway users, having several destinations and housing near one another encourages shorter and perhaps fewer trips by automobile should pedestrian, bicycle, and public transit facilities be provided. Having alternatives to automobiles frees up roadway space and in turn can alleviate congestion. This is an important part of planning for congestion mitigation in any community.

Traffic congestion is caused by both recurring and non-recurring congestion. In southeastern Massachusetts, the recurring congestion is attributed to work trip traffic during the morning and afternoon commute, and retail traffic, primarily along densely developed commercial corridors. Non-recurring congestion is attributed to incidents, adverse weather conditions, work zones and other special events or seasonality.

To address congestion effectively and comprehensively, SRPEDD has employed the use of the Federal Highway Administration's (FHWA) guidebook for congestion management that includes 8 steps for developing a congestion management process (CMP) that addresses issues important to the SRPEDD region.

Table 1: Congestion Management Process Steps

| CMP Step | Section in Plan |
|--|---|
| 1. Develop Regional Objectives for Congestion Management | Regional Objectives |
| 2. Define CMP Network | Congestion Management Network |
| 3. Develop Multimodal Performance Measures | Performance Measures |
| 4. Collect Data/Monitor System Performance | Recommendations and Next Steps |
| 5. Analyze Congestion Problems and Needs | Performance Measures |
| 6. Identify and Assess Strategies | Strategies for Congestion Management |
| 7. Program and Implement Strategies | Planned Congestion Improvement Projects |
| 8. Evaluate Strategy Effectiveness | Recommendations and Next Steps |

Regional Objectives

It is the goal of this Congestion Management Plan to:

- Identify areas of recurring and non-recurring congestion
- Evaluate system-wide performance in the SRPEDD region historically, currently, and in the future
- Highlight projects that include congestion mitigation for efficient and safe movement of people and goods throughout the SRPEDD region
- Ensure the continued monitoring of congestion trends throughout the region
- Maintain levels of travel time reliability consistent with statewide Federal Highway Administration goals for Massachusetts

Congestion Management Network

Within the SRPEDD region, the CMP network includes all roadways under both state and local jurisdiction. Data availability for different jurisdictions may vary in consistency, age, and format. Continued effort on the part of SRPEDD to collect data on local roadways and maintain a transportation demand model, MassDOT's own counts on interstate or other state highways, and new data provided through the Regional Integrated Transportation Information System (RITIS) can be combined to comprehensively provide insight into the performance of the CMP network.

Identification of Congestion

The SMMPO utilizes three methods to identify congestion in the region: 1) assessment of existing data, 2) collective knowledge of the region and 3) the Travel Demand Forecasting Model.

The assessment of existing data uses regional databases such as the MassDOT MS2 database, historic traffic count files, MassDOT's road inventory file, traffic studies (conducted by SRPEDD or others), the region's Signalized Intersection Inventory database, and RITIS historic data. The Signalized Intersection Inventory consists of signal timing information, intersection geometry, traffic volume data, and a capacity analysis that defines the existing operational characteristics and average delay at each of the region's 361 signalized intersections. RITIS data originates from INRIX as well as the National Performance Management Research Data Set (NPMRDS) data broken into segments. Data is collected from roadway users to estimate speed, delays, and several other factors along the transportation network.

Collective knowledge of the region originates through the public participation process, which encompasses input from staff, local officials, and the public through the Joint Transportation Planning Group (JTPG). Staff verification is an important component of this effort.

Finally, the Travel Demand Forecasting Model provides a means of predicting future traffic conditions. The model calculates traffic flow to the year 2050, giving us an understanding of future traffic conditions based on current growth trends and land use policies.

Once identified, further study is initiated to identify the cause and extent of problem areas. Alternative measures are examined to determine their impact on reducing congestion. Ultimately, recommendations are offered to decision-makers for implementation.

Analyses

Corridors and Road Segments- Along Road segments, congestion is expressed as a Volume to Capacity Ratio (v/c). The v/c ratio is a measure of a road's traffic volume versus its vehicle carrying capacity represented by a numerical scale where a zero ratio equals no traffic congestion and a ratio above 1.0 exceeds the road's capacity. A v/c ratio above 0.8 is considered congested in the SMMPO region.

Every intersection or corridor possesses its own ability to effectively accommodate traffic. A capacity analysis measures that ability and determines the quality of traffic flow, referred to as Level of Service (LOS). There are six levels of service that are assigned the letters A through F. LOS A represents the best conditions while LOS F represents the worst.

Intersections - In recent years, SRPEDD staff have compiled a comprehensive database consisting of all the signalized intersections in the region. For each intersection, the database provides the current LOS from a capacity analysis based on recent traffic volumes (turning movement counts), the existing lane configuration, and operational characteristics including signal timing and phasing. Each of the levels of service (A through F) represents an average delay for all vehicles traveling

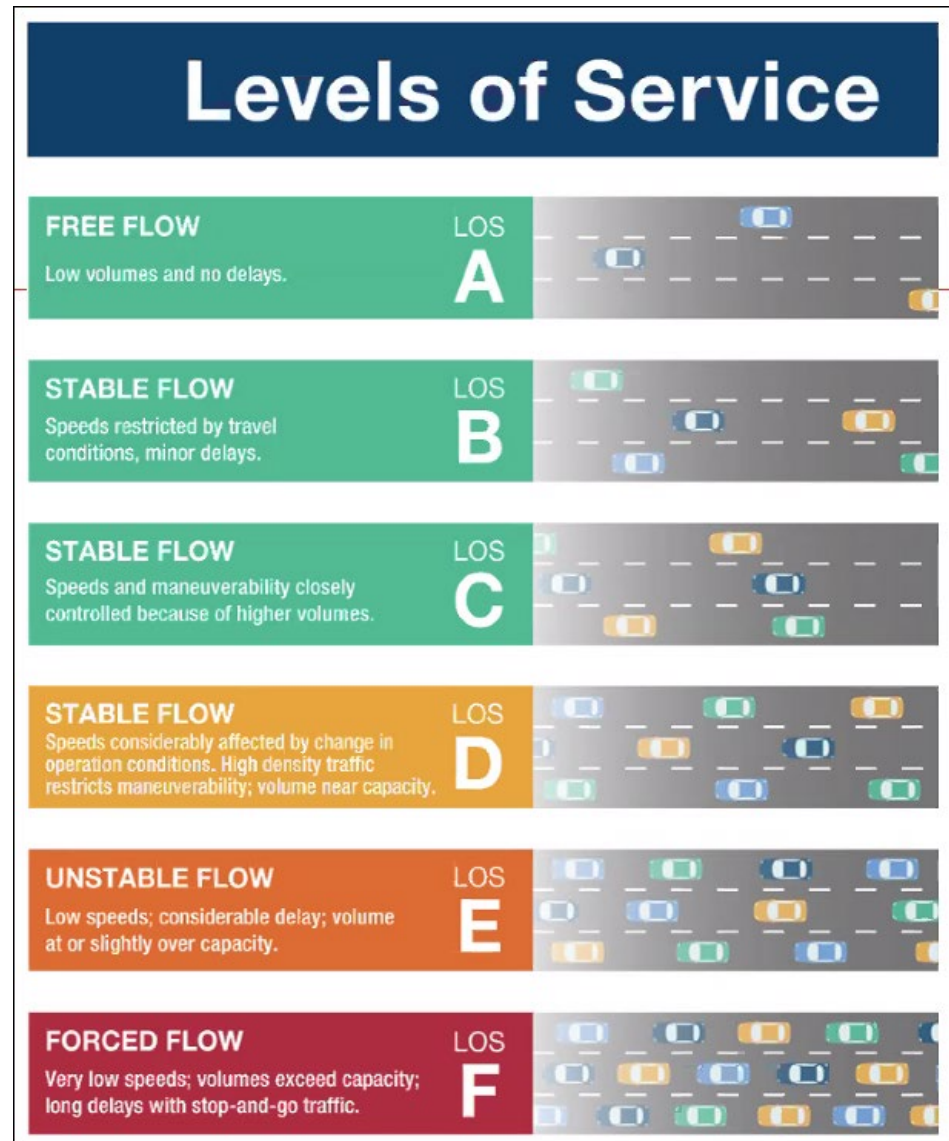


Figure 1: Level of Service Reference Image

through the intersection during a peak travel period of the day. It is calculated by a capacity analysis using techniques defined in the Highway Capacity Manual (HCM). Table 2 defines the level of service for

signalized and unsignalized intersections based on the calculated average delay in seconds per vehicle while the table below lists and ranks the intersections within the SMMPO region that are considered congested based on levels of service E and F.

Table 2: Level of Service by Delay Seconds

| LOS | Signalized Intersection Delay per Vehicle (Seconds) | Unsignalized Intersection Delay per Vehicle (Seconds) |
|------------|--|--|
| A | =<10 | =<10 |
| B | > 10 to 20 | > 10 to 15 |
| C | > 20 to 35 | > 15 to 25 |
| D | > 35 to 55 | > 25 to 35 |
| E | > 55 to 80 | > 35 to 50 |
| F | > 80 | > 50 |

Table 3: Congested Intersections by Municipality (LOS E-F)

| Community | Intersection | Year | Delay (Seconds) | PM LOS |
|------------------|---|-------------|----------------------------|-------------------|
| Attleboro | Toner Blvd / I-95NB Ramps | 2019 | 106 | F |
| Attleboro | South Ave. (Rte. 123) / Tiffany St. | 2016 | ≥120 | F |
| Attleboro | Highland Ave. (Rte. 123) / Washington St. (Rte. 1) | 2015 | 57 | E |
| Attleboro | Washington St. (Rte. 1) / May St. | 2015 | ≥120 | F |
| Dartmouth | GAR Highway (Rte. 6) / Reed Rd. | 2021 | 58 | E |
| Dartmouth | GAR Highway (Rte. 6) / Slocum Rd. | 2016 | ≥120 | F |
| Dartmouth | GAR Highway (Rte. 6) / Faunce Corner Rd. / Old Westport Rd. | 2011 | 58 | E |

| Community | Intersection | Year | Delay (Seconds) | PM LOS |
|------------------|---|-------------|----------------------------|-------------------|
| Fairhaven | Huttleston Ave. (Rte. 6) / Main St. | 2018 | 118 | F |
| Fairhaven | Huttleston Ave. (Rte. 6) / Route 240 / Sconticut Neck Rd. | 2015 | 55 | E |
| Fall River | William S. Canning Blvd. / Newton St. / Market Basket | 2018 | 79 | E |
| Fall River | Eastern Ave. / New Boston Rd. | 2017 | 92 | F |
| Fall River | Eastern Ave. / Bedford St. | 2016 | ≥120 | F |
| Fall River | Columbia St. / Milliken Blvd. / Washington St. | 2016 | ≥120 | F |
| Fall River | Plymouth Ave. / Second St. / Niagara St / Manton St | 2016 | ≥120 | F |
| Fall River | Plymouth Ave. / Stafford Rd. | 2016 | 113 | F |
| Fall River | Stafford Rd. / Brayton Ave. / Winthrop St. | 2016 | ≥120 | F |
| Fall River | Brayton Ave. / Eastern Ave. / Martine St. / DeValle St. | 2016 | ≥120 | F |
| Fall River | South Main St. / Globe St. / Broadway (Globe 4 Corners) | 2010 | ≥120 | F |
| Lakeville | Bedford St. (Rte. 18) / Rhode Island Rd. (Rte. 79) | 2017 | 69 | E |
| Mansfield | Copeland Dr. / School St. / West St. | 2017 | ≥120 | F |
| Mansfield | Route 140 / Norfolk St (Home Depot Dwy) | 2015 | 59 | E |
| Mansfield | Chauncy St. (Rte. 106) / North Main St. | 2014 | 106 | F |
| Mansfield | Chauncy St. (Rte. 106) / Route 140 | 2013 | ≥120 | F |
| Middleborough | Route 44 / Plympton St. (Rte.105) | 2015 | ≥120 | F |
| New Bedford | Kempton St. / Mill St. / Pleasant St. / Route 6 / Purchase St. / Sixth St. (Octopus) | 2019 | ≥120 | F |
| New Bedford | Mt. Pleasant St. / Nash Rd. | 2011 | 70 | E |
| New Bedford | Brownell Ave. / Kempton St. / Route 6 / Route 140 | 2009 | 69 | E |
| North Attleboro | E. Washington St. (Rte. 1) / Elmwood St. | 2017 | ≥120 | F |
| North Attleboro | S. Washington St. (Rte. 1) / Wal Mart Site Dr. | 2015 | 106 | F |
| North Attleboro | S. Washington St. (Rte. 1) / Draper Ave. | 2015 | 110 | F |

| Community | Intersection | Year | Delay (Seconds) | PM LOS |
|------------------|---|-------------|----------------------------|-------------------|
| North Attleboro | S. Washington St. (Rte. 1A) / E. Washington St. (Rte. 1) / Hoppin Hill Rd. (Rte. 120) | 2015 | ≥120 | F |
| North Attleboro | S. Washington St. (Rte. 1) / Allen Ave. West / Fashion Crossing | 2015 | 118 | F |
| North Attleboro | E. Washington St. (Rte. 1) / Elm St. | 2008 | 61 | E |
| Norton | E & W Main St (Rte. 123) / Mansfield & Taunton Ave. (Rte. 140) | 2017 | ≥120 | F |
| Plainville | East Bacon St. (Rte. 106) / Washington St. (Rte. 1) | 2019 | 110 | F |
| Plainville | Taunton St. (Rte. 152) / Plainville Commons Driveway | 2015 | ≥120 | F |
| Raynham | Route 44 / South St. West | 2015 | 77 | E |
| Raynham | Route 44 / Orchard St. | 2011 | 80 | E |
| Seekonk | Fall River Ave. (Rte. 6) / Mink St. (Rte. 114A) / Sam's Club | 2017 | ≥120 | F |
| Seekonk | Fall River Ave. (Rte. 114A) / I-195 EB (2 intersections) | 2015 | ≥120 | F |
| Seekonk | Fall River Ave. (Rte. 114A) / I-195 WB (2 intersections) | 2015 | ≥120 | F |
| Seekonk | Fall River Ave. (Rte. 6) / Commerce Way / Seekonk Square | 2015 | 113 | F |
| Seekonk | Taunton Ave. (Rte. 44) / Arcade Ave. | 2014 | ≥120 | F |
| Somerset | Wilbur Ave. (Rte. 103) / Brayton Point Rd. | 2021 | 84 | F |
| Swansea | GAR Highway (Rte. 6) / Maple Ave. | 2015 | 63 | E |
| Taunton | Broadway (Rte. 138) / Washington St. / St. Mary's Sq. | 2019 | ≥120 | F |
| Taunton | Dean St. (Rte. 44) / Longmeadow Rd. / Owen Riverway | 2017 | 90 | E |
| Taunton | Washington St. / Oak St. / Tremont St. | 2017 | ≥120 | F |
| Wareham | Cranberry Hwy (Rte. 28) / Toby Rd / Tow Rd | 2018 | ≥120 | F |

Previous Experience

The SMMPO has regularly identified congestion issues in the region. In 1995, the first Congestion Management System report was published, which listed 26 congestion issues ranging from corridor-wide traffic flow problems to overcrowded commuter rail parking

facilities. Six (6) locations were added to the list in 1996 and 1997. Subsequent Regional Transportation Plans for the region, published in 2000, 2003, and 2007 listed an additional 43 locations (14 in the 2000 Transportation Plan, 9 in the 2003 Transportation Plan, and 20 in the 2007 Transportation Plan). Corridors are identified primarily through the Travel Demand Mode and intersections are identified through the region's updated Signalized Intersection Database. In addition to these efforts and previous work, communities identified several congestion issues during community meetings in late 2022 and early 2023 as part of outreach for the 2023 update of the Regional Transportation Plan. In addition to these meetings, a survey was created for SRPEDD communities to report congestion problem areas was presented to the Joint Planning Transportation Planning Group, the Southeastern Massachusetts Metropolitan Planning Organization, and the SRPEDD Commission A summary of these locations can be viewed in Table 4.

Table 4: Self-Reported Congestion Locations Reported by SMMPO Communities

| Community | Congestion Location | Additional Details |
|------------------|---|--|
| Attleboro | County Square | N/A |
| Attleboro | South Ave and Lathrop Rd | N/A |
| Attleboro | Thacher St at County St and Rathbun Willard Dr | N/A |
| Carver | Carver Schools | Issues with backups during morning drop-off and afternoon pick-up, town looking into satellite pickup areas for high school to reduce congestion |
| Dighton | Rte. 138 and Center St | Signal timing and needed intersection upgrades to accommodate traffic from new developments |
| Fairhaven | Rte. 195 and Rte. 240 | Backups during evening rush hours |
| Freetown | Assonet Village Four Corners (Water St, N. Main St, S. Main St, Elm St) | Issues with intersection geometry, right of way, large vehicles passing through, |

| Community | Congestion Location | Additional Details |
|--------------------|---|---|
| | | safety concerns, and emergency vehicle clearance of intersection |
| Lakeville | Rte. 18 and Rte. 105 | Intersection alignment and geometry |
| Lakeville | Bedford St and Taunton St/Middleborough Rotary | N/A |
| Mattapoisett | Ned's Point Rd | Roadway configuration/width presents trouble for this scenic roadway that attracts pedestrians, cyclists, and drivers |
| Mattapoisett | Main St and Water St | N/A |
| Mattapoisett | North St | During normal commuting hours area will experience backups either from accidents on Rte. 195 or high traffic volumes |
| Middleborough | Middleborough Rotary | Backups have been somewhat alleviated by restriping at rotary but with additional warehouses proposed in the area backups may return |
| Middleborough | Route 44 at Everett St, Old Center St, Plymouth St, and Plympton St | Signal timing at each intersection becomes disjointed and causes backups primarily in the afternoon hours |
| Middleborough | Rte. 28 and Rte. 105 | Volumes associated with the construction of a new train station, schools, new residential development may cause increased backups at intersection |
| North Attleborough | Kelly Blvd and Rte. 152 | When crashes occur on Route 95, traffic is often redirected onto these roads causing backups in town |

| Community | Congestion Location | Additional Details |
|--------------------|--|---|
| North Attleborough | Rte. 152 and Rte. 106 | Town has received a grant to increase capacity of roadway but additional widening is desired to reduce congestion |
| Norton | W. Main St at Norton Public Schools | Issues during morning drop-off and afternoon pick-up for school system likely due to bus fees and limited walk radius |
| Norton | E. Main St from I-495 to Norton Center | NB traffic on Route 140 delayed due to signals and traffic volumes |
| Norton | Norton Post Office | GATRA bus stop location causes congestion issues at current location |
| Norton | Rte. 123 | Issue with current volumes and capacity |
| Norton/Mansfield | Xfinity Center | Traffic flow issues at the beginning and end of events held at the Xfinity Center |
| Plainville | Rte. 106 and Rte. 152 | Used as an alternative route when Route 95 is congested and causes both roads to back up |
| Plainville | Rte. 152 | Inadequate number of turning lanes for areas experiencing heavy congestion especially during school dismissal |
| Rehoboth | Rte. 44 and Rte. 118 | Issues during morning drop-off and afternoon pick-up for school system |
| Rehoboth | Martin St and Rte. 118 | Stop sign and right of way issues create confusion for motorists causing delays |
| Seekonk | Rte. 114A from Mill Rd to I-195 | N/A |
| Somerset | Route 138 near Pratt Ave | Afternoon congestion associated with school pick-ups between 3-5PM |

| Community | Congestion Location | Additional Details |
|------------------|--------------------------------------|---|
| Swansea | Main St. at Gardner's Neck Road | Issues during morning drop-off and afternoon pick-up despite lack of bus fees, and 1.5 mile walk radius |
| Wareham | Public School Entrances and Exits | Issues during morning drop-off and afternoon pick-up |
| Wareham | Rte. 6 at Gatehouse Dr and Tyler Ave | Roadway changes from four lanes to 2 lanes in westbound direction |
| Westport | Rte. 88 at Old County Rd | Signal timing issues especially at school dismissal times |

Performance Measures

Congestion and Travel Time Reliability

When reviewing the movement of freight in the SMMPO region, it is important to establish metrics to measure the ability of vehicles to move freely. To accomplish measures of free traffic movement, data within the Regional Integrated Transportation Information System (RITIS) for Truck Travel Time Reliability (TTTR) and Level of Travel Time Reliability (LOTTR) on interstate roads, and Travel Time Reliability (TTR) for non-interstate roads will be used. All lengths refer to segments within the CMP that have scores assigned based on performance under these three metrics.

Truck Travel Time Reliability (TTTR)

Using data from INRIX contained within the RITIS suite, it is possible to examine TTTR for truck traffic within the SRPEDD region on interstate roadways. The ratio of TTTR is calculated by dividing the 95th percentile truck travel time (slower conditions) by the 50th percentile truck travel time (usual conditions). A higher ratio indicates less reliability while a lower ratio indicates a more reliable roadway. Using these metrics for the interstate system in the SMMPO region, both an overall TTTR ratio can be established for interstate roads in the region as well as a list of roadways that exceed a desirable ratio. Additionally, the Federal Highway Administration (FHWA) has set goals for the entire state of Massachusetts to have a TTTR below 1.85. Using this goal, the SMMPO region has been analyzed.

Table 5: Truck Travel Time Reliability for SRPEDD Region and Massachusetts

| Truck Travel Time Reliability (TTTR) | 2017 | 2018 | 2019 | 2020 | 2021 |
|--------------------------------------|------|------|------|------|------|
| FHWA Goal | N/A | N/A | 1.85 | N/A | 1.85 |
| Massachusetts Performance | 1.84 | 1.89 | 1.86 | 1.44 | 1.61 |
| SRPEDD Performance (INRIX Data) | 1.42 | 1.51 | 1.42 | 1.24 | 1.36 |

Based on the data gathered from the RITIS probe data analytics suite, the interstate system in the SMMPO region operates efficiently, with minimal disruptions from queueing to transported freight. There are, however, certain roadways that do exceed the goal TTTR set out by the FHWA. To have the most representative data, data from 2021 was used and compared to previous years dating back to 2017 as data was available. An interactive map of 2021 problem locations can be found [here](#). Roadways that were above FHWA thresholds set for Massachusetts appear in Table 6:

Table 6: Truck Travel Time Reliability Problem Areas in 2021

| Community | Roadway | Direction | Intersection | Length (Miles) | TTTR |
|-----------------|---------|-----------|--------------------------------|----------------|------|
| North Attleboro | I-295 | NB | I-95/Exit 4 | 1.46 | 1.86 |
| Raynham | I-495 | SB | Rte-24/Exit 19 | 0.96 | 1.91 |
| Seekonk | I-195 | WB | Rte-114A/Fall River Ave/Exit 1 | 0.23 | 1.93 |
| New Bedford | I-195 | WB | Coggeshall St/Exit 28 | 0.14 | 1.94 |
| New Bedford | I-195 | WB | Rte-18/Exit 26 | 0.24 | 1.97 |

| Community | Roadway | Direction | Intersection | Length (Miles) | TTTR |
|------------------|----------------|------------------|----------------------------------|---------------------------|-------------|
| Attleboro | I-95 | NB | Robert Toner Blvd/Exit 7 | 0.19 | 2.06 |
| New Bedford | I-195 | WB | Washburn St/Exit 27 | 0.02 | 2.1 |
| New Bedford | I-195 | WB | Washburn St/Exit 27 | 0.06 | 2.15 |
| Somerset | I-195 | EB | Charles S Braga Bridge (East) | 1.01 | 2.48 |
| Mansfield | I-495 | NB | I-95/Exit 33 | 1.44 | 2.56 |
| Middleborough | I-495 | SB | US-44/Harding St/Exit 15 | 3.86 | 2.59 |
| North Attleboro | I-295 | NB | Exit 4B | 0.81 | 2.61 |
| North Attleboro | I-295 | NB | I-95/Exit 4 | 0.07 | 2.62 |
| Somerset | I-195 | EB | Charles S Braga Bridge (East) | 0.58 | 2.64 |
| Middleborough | I-495 | NB | Rte-18/Bedford St/Exit 14 | 0.18 | 2.69 |
| Mansfield | I-495 | NB | I-95/Exit 33 | 0.52 | 2.8 |
| Middleborough | I-495 | NB | US-44/Harding St/Exit 15 | 0.17 | 2.85 |
| Middleborough | I-495 | NB | US-44/Harding St/Exit 15 | 0.50 | 2.93 |
| Mansfield | I-95 | SB | I-495/Exit 6 | 0.56 | 3.09 |
| Seekonk | I-195 | WB | MA/RI State Border (East) | 0.55 | 5.15 |
| Seekonk | I-195 | WB | Mass/Rhode Island State Line | 0.04 | 6.84 |

Interstate Travel Time Reliability (ITTR)

In addition to TTTR, data for Interstate Travel Time Reliability (ITTR) is also available for the SMMPO region. This data is however, calculated differently and results in a **percentage of all person-miles traveled that were reliable**. The data provides insight into the performance of the interstate highways in the SMMPO region for all vehicles rather than just trucks.

Table 7: Interstate Travel Time Reliability for SMMPO Region and Massachusetts

| Interstate Reliable Person Miles Traveled | 2017 | 2018 | 2019 | 2020 | 2021 |
|--|-------------|-------------|-------------|-------------|-------------|
| FHWA Goal | N/A | N/A | 68% | N/A | 68% |
| Massachusetts Performance | 70.4% | 69.8% | 69% | 94.5% | 84.2% |
| SRPEDD Performance (INRIX Data) | 97.9% | 95.6% | 98.6% | 100% | 99.5% |

The FHWA defines **reliable roadways as those that have a level of travel time reliability (LOTTR) lower than 1.50**.¹ In the same way TTTR is calculated, LOTTR is calculated by dividing the 95th percentile travel time (slower conditions) by the 50th percentile travel time (usual conditions) to produce a LOTTR ratio. Any segments with a ratio above 1.50 are deemed as “unreliable” when calculating the total percentage of miles traveled that are reliable. The higher the percent of reliable miles traveled, the lower the LOTTR ratio. SRPEDD has had high reliability in recent years since 2017. An interactive map of 2021 problem locations can be found [here](#). In 2021, only one roadway was above the threshold set for Massachusetts by the FHWA as seen in Table 8:

Table 8: Interstate Travel Time Reliability Problem Areas in 2021

| Community | Roadway | Direction | Intersection | Length (Miles) | ITTR |
|------------------|----------------|------------------|---------------------|-----------------------|-------------|
| Mansfield | I-95 | SB | I-495/Exit 12 | 0.56 | 2.54 |

¹ FHWA in the [Federal Register “National Performance Management Measures”](#)

Non-Interstate Travel Time Reliability (TTR)

In addition to ITTR and TTTR, data for Travel Time Reliability (TTR) is also available for the SRPEDD region. This data is however, calculated differently and results in a **percentage of all person-miles traveled that were reliable**. The data provides insight into the performance of the non-interstate highways in the SRPEDD region.

Table 9: Non-Interstate Travel Time Reliability for SMMPO Region and Massachusetts

| Non-Interstate Reliable Person Miles Traveled | 2017 | 2018 | 2019 | 2020 | 2021 |
|--|-------------|-------------|-------------|-------------|-------------|
| FHWA Goal | N/A | N/A | N/A | N/A | 80% |
| Massachusetts Performance | N/A | N/A | 82.4% | N/A | N/A |
| SRPEDD Performance (INRIX Data) | 88.5% | 91.2% | 89.2% | 93.5% | 91.9% |

The FHWA defines **reliable roadways as those that have a level of travel time reliability (LOTTR) lower than 1.50**.² In the same way TTTR is calculated, LOTTR is calculated by dividing the 95th percentile travel time (slower conditions) by the 50th percentile travel time (usual conditions) to produce a LOTTR ratio. Any segments with a ratio above 1.50 are deemed as “unreliable” when calculating the total percentage of miles traveled that are reliable. An interactive map of 2021 problems can be found [here](#). The higher the percentage of reliable miles traveled, the lower the LOTTR ratio. Roadways with a LOTTR greater than or equal to 1.5 and greater than 0.1 mile in length are shown in Table 10.

² FHWA in the [Federal Register “National Performance Management Measures”](#)

Table 10: Non-Interstate Travel Time Reliability Problem Areas in 2021

| Community | Roadway | Direction | Intersection | Length (Miles) | LOTTR |
|-------------|-------------|-----------|-------------------------------------|----------------|-------|
| New Bedford | MA-18 | NB | Sawyer St | 0.11 | 1.5 |
| Dartmouth | US-6 | EB | Hathaway Rd | 0.22 | 1.5 |
| Somerset | US-6 | EB | MA-103/MA-138/Riverside Ave | 0.22 | 1.5 |
| Fairhaven | US-6 | WB | New Bedford Fairhaven Bridge (East) | 1.37 | 1.5 |
| New Bedford | MA-18 | NB | Tarkiln Hill Rd | 1.73 | 1.5 |
| Taunton | US-44 | EB | MA-24/Amvets Memorial Hwy | 1.16 | 1.51 |
| Wareham | MA-28 | NB | I-195 | 0.21 | 1.52 |
| New Bedford | Hathaway Rd | EB | Mount Pleasant St | 0.45 | 1.52 |
| Taunton | Oak St | EB | MA-140/Tremont St | 0.97 | 1.53 |
| Taunton | MA-140 | SB | US-44/Church Green | 0.10 | 1.54 |
| Norton | MA-123 | EB | I-495 | 0.22 | 1.54 |
| Wareham | MA-28 | SB | I-195 | 0.21 | 1.55 |
| Fall River | MA-81 | NB | I-195 | 1.05 | 1.57 |
| Fairhaven | US-6 | EB | MA-240/Sconticut Neck Rd | 1.37 | 1.57 |
| Swansea | RT-136 | SB | US-6/G A R Hwy | 0.19 | 1.58 |
| Norton | MA-123 | EB | MA-140/Mansfield Ave/Taunton Ave | 2.37 | 1.58 |
| Fall River | MA-79 | SB | I-195 | 0.10 | 1.59 |
| Fall River | US-6 | EB | Robeson St | 0.70 | 1.59 |

| Community | Roadway | Direction | Intersection | Length (Miles) | LOTTR |
|------------------|----------------|------------------|--|---------------------------|--------------|
| New Bedford | MA-18 | SB | Sawyer St | 1.73 | 1.59 |
| New Bedford | MA-18 | NB | Ashley Blvd | 1.45 | 1.61 |
| Fall River | MA-81 | SB | I-195 | 0.11 | 1.63 |
| Norton | MA-123 | WB | I-495 | 0.23 | 1.65 |
| Taunton | Williams St | NB | US-44/Winthrop St | 0.18 | 1.66 |
| New Bedford | MA-18 | SB | I-195 | 0.17 | 1.73 |
| Middleborough | US-44 | WB | MA-105/Plympton St | 0.15 | 1.74 |
| Attleboro | MA-123 | EB | MA-118/Emory St/Park St | 0.11 | 1.75 |
| Taunton | MA-140 | NB | US-44/Church Grn | 0.12 | 1.75 |
| New Bedford | US-6 | EB | MA-18/New Bedford Fairhaven Bridge (West) | 0.35 | 1.75 |
| New Bedford | US-6 | EB | New Bedford Fairhaven Bridge (East) | 0.86 | 1.76 |
| Fairhaven | MA-240 | NB | US-6/Huttleston Ave | 0.10 | 1.77 |
| Fairhaven | MA-18 | NB | Sawyer St | 0.20 | 1.79 |
| Taunton | MA-138 | SB | US-44/MA-140/Main St/Winthrop St | 0.15 | 1.86 |
| Fairhaven | US-6 | WB | MA-240/Sconticut Neck Rd | 0.10 | 1.91 |
| Fall River | Pleasant St | SB | Troy St/4th St | 0.10 | 1.91 |
| Raynham | MA-24 | SB | US-44/Exit 20 | 2.61 | 1.92 |
| Fairhaven | US-6 | WB | MA-18/New Bedford Fairhaven Bridge | 0.87 | 1.94 |

| Community | Roadway | Direction | Intersection | Length (Miles) | LOTTR |
|------------------|------------------------|------------------|------------------------------------|---------------------------|--------------|
| New Bedford | Shawmut Ave/Airport Rd | NB | New Bedford Regional Airport | 1.05 | 2 |
| Attleboro | MA-118 | NB | MA-123/Pleasant St | 1.13 | 2 |
| Attleboro | MA-123 | WB | MA--RI State Border | 1.30 | 2.01 |
| Fairhaven | US-6 | EB | MA-240/Sconticut Neck Rd | 0.10 | 2.02 |
| Attleboro | MA-1A | SB | RI--Ma State Border | 0.17 | 2.02 |
| New Bedford | Shawmut Ave/Airport Rd | SB | Hathaway Rd | 1.05 | 2.04 |
| Mansfield | N Main St | SB | Crocker St | 0.13 | 2.1 |
| New Bedford | US-6 | WB | County St | 0.22 | 2.17 |
| New Bedford | US-6 | EB | MA-18/New Bedford Fairhaven Bridge | 0.13 | 2.19 |
| Fairhaven | MA-240 | SB | US-6/Huttleston Ave | 0.10 | 2.38 |
| Attleboro | MA-123 | EB | US-1 Alt/Newport Ave | 1.30 | 2.56 |
| New Bedford | US-6 | WB | MA-18/New Bedford Fairhaven Bridge | 0.25 | 3.25 |

Additional consideration has been given to those smaller road segments that experience congestion but total less than 0.1 mile in length. These congestion issues are more likely to be caused by intersections nearby than be large scale congestion issues.

Table 11: Non-Interstate Travel Time Reliability Problem Areas in 2021 Under 0.1 Miles

| Community | Roadway | Direction | Intersection | Length (Miles) | LOTTR |
|------------------|-----------------------------|------------------|-------------------------|-----------------------|--------------|
| New Bedford | Cove Rd | WB | Rockdale Ave/Orchard St | 0.03 | 1.5 |
| Fall River | Borden St | NB | 5th St/Hartwell St | 0.05 | 1.5 |
| New Bedford | JFK Memorial Hwy | SB | Brock Ave/Cove Rd | 0.05 | 1.5 |
| Taunton | Oak St | EB | Highland St | 0.07 | 1.53 |
| New Bedford | Shawmut Ave/Airport Rd | NB | Hathaway Rd | 0.07 | 1.53 |
| Fall River | 2nd St | SB | Rodman St | 0.05 | 1.54 |
| New Bedford | Cove Rd | WB | Rodney French Blvd | 0.05 | 1.55 |
| New Bedford | Rockdale Ave | SB | Cove Rd | 0.04 | 1.56 |
| Fall River | Borden St | SB | 5th St/Hartwell St | 0.05 | 1.56 |
| Taunton | Highland St | NB | Florence St | 0.06 | 1.56 |
| New Bedford | MA-140 | SB | US-6/Kempton St | 0.02 | 1.57 |
| Fall River | Rodman St | NB | 2nd St | 0.04 | 1.57 |
| Fall River | MA-81 | NB | I-195 | 0.07 | 1.57 |
| New Bedford | John F Kennedy Memorial Hwy | SB | Brock Ave/Cove Rd | 0.08 | 1.57 |

| Community | Roadway | Direction | Intersection | Length (Miles) | LOTTR |
|------------------|------------------------|------------------|-----------------------------------|-----------------------|--------------|
| Fall River | Rodman St | NB | Hartwell St | 0.05 | 1.6 |
| Taunton | Oak St | WB | Highland St | 0.07 | 1.62 |
| Taunton | Highland St | NB | US-44/Winthrop St | 0.07 | 1.62 |
| New Bedford | MA-140 | NB | US-6/Kempton St | 0.03 | 1.63 |
| Fall River | Borden St | SB | 5th St/Hartwell St | 0.04 | 1.63 |
| Carver | MA-58 | SB | Plymouth St | 0.03 | 1.65 |
| Fall River | Rodman St | SB | Hartwell St | 0.05 | 1.67 |
| Fall River | Hartwell St | NB | Rodman St | 0.08 | 1.67 |
| Norton | MA-140 | NB | Main St/Library Sq | 0.03 | 1.69 |
| Fairhaven | MA-240 | SB | Bridge St | 0.04 | 1.69 |
| Fall River | MA-79 | SB | I-195 | 0.09 | 1.69 |
| New Bedford | US-6 | EB | MA-140/Brownell Ave | 0.06 | 1.7 |
| Swansea | US-6 | WB | MA-118/Milford Rd/Swansea Mall Dr | 0.08 | 1.7 |
| Fall River | 2nd St | SB | Rodman St | 0.06 | 1.71 |
| New Bedford | Pleasant St | SB | US-6/Kempton St/Mill St | 0.06 | 1.71 |
| Swansea | US-6 | EB | MA-118/Milford Rd/Swansea Mall Dr | 0.08 | 1.71 |
| Taunton | US-44 | EB | MA-140/Summer St | 0.04 | 1.72 |
| New Bedford | Shawmut Ave/Airport Rd | NB | New Bedford Regional Airport | 0.01 | 1.73 |
| Dartmouth | US-6 | WB | Old Westport Rd/Faunce Corner Rd | 0.03 | 1.75 |

| Community | Roadway | Direction | Intersection | Length (Miles) | LOTTR |
|------------------|------------------------------|------------------|-------------------------------------|---------------------------|--------------|
| Taunton | Highland St | SB | US-44/Winthrop St | 0.06 | 1.75 |
| New Bedford | Pleasant St | NB | Elm St | 0.04 | 1.78 |
| Fall River | 2nd St | NB | Rodman St | 0.06 | 1.78 |
| Taunton | Highland St | SB | Florence St | 0.06 | 1.79 |
| Carver | Plymouth St/Samoset St | WB | Rt-58/N Main St | 0.02 | 1.8 |
| Taunton | US-44 | WB | MA-104/Dean St | 0.03 | 1.8 |
| Fall River | 4th St | NB | I-195 | 0.06 | 1.8 |
| Fall River | Hartwell St | SB | Rodman St | 0.03 | 1.82 |
| Dartmouth | US-6 | EB | Old Westport Rd/Faunce Corner Rd | 0.03 | 1.85 |
| Attleboro | MA-123 | WB | MA-118/Emory St/Park St | 0.07 | 1.88 |
| New Bedford | Shawmut Ave/Airport Rd | SB | Hathaway Rd | 0.07 | 1.88 |
| Mansfield | N Main St | NB | MA-106/Chauncy St | 0.01 | 1.89 |
| New Bedford | Cove Rd | EB | Rockdale Ave/Orchard St | 0.03 | 1.91 |
| New Bedford | Pleasant St | NB | Purchase St | 0.06 | 1.91 |
| Mansfield | MA-140 | NB | MA-106/Chauncy St | 0.04 | 1.94 |
| New Bedford | Pleasant St | NB | US-6/Kempton St/Mill St | 0.09 | 1.96 |
| Mansfield | MA-140 | SB | MA-106/Chauncy St | 0.03 | 1.98 |
| New Bedford | Rockdale Ave | NB | US-6/Kempton St | 0.04 | 1.98 |

| Community | Roadway | Direction | Intersection | Length (Miles) | LOTTR |
|------------------|--------------------------------------|------------------|--------------------------------------|---------------------------|--------------|
| New Bedford | Rockdale Ave | SB | US-6/Kempton St | 0.04 | 2 |
| New Bedford | John F Kennedy Memorial Hwy | NB | Brock Ave/Cove Rd | 0.05 | 2 |
| New Bedford | Cove Rd | EB | Rodney French Blvd | 0.05 | 2 |
| New Bedford | US-6 | WB | MA-140/Brownell Ave | 0.06 | 2 |
| Attleboro | MA-123 | EB | MA-118/Emory St/Park St | 0.06 | 2 |
| Attleboro | MA-123 | WB | MA-152/Main St | 0.06 | 2 |
| Fall River | Hartwell St | SB | Rodman St | 0.08 | 2 |
| New Bedford | John F Kennedy Memorial Hwy | NB | Cove St | 0.08 | 2 |
| Dighton | Center St | WB | Williams St | 0.05 | 2.07 |
| Taunton | Highland St | SB | US-44/Winthrop St | 0.07 | 2.18 |
| Mansfield | N Main St | SB | MA-106/Chauncy St | 0.02 | 2.2 |
| Attleboro | MA-118 | NB | Rt-123/Pleasant St | 0.03 | 2.29 |
| Mansfield | N Main St | SB | Rt-106/Chauncy St | 0.01 | 2.33 |
| Fall River | US-6 | EB | MA-79/MA-138/Davol St | 0.07 | 2.36 |
| Middleborough | MA-18 | NB | US-44/Rt-28/Harding St/W Grove St | 0.05 | 2.47 |

| Community | Roadway | Direction | Intersection | Length (Miles) | LOTTR |
|-----------|---------|-----------|----------------------------|----------------|-------|
| Attleboro | MA-1A | SB | Rhode Island/Ma State Line | 0.03 | 2.59 |
| Attleboro | RI-1A | SB | RI/MA State Line | 0.02 | 2.62 |
| Swansea | MA-118 | SB | US-6 | 0.04 | 2.67 |

Bottleneck Identification

Another method applied to analyze the efficiency of movement throughout the region involves examining areas where bottlenecks occur. These areas are the most likely to lead to slow downs for vehicles throughout the region. SRPEDD used the RITIS data probe analytics suite once again to identify areas within the region where bottlenecks occur. The bottlenecks identified originate within the SRPEDD region but may extend outside of the region. While many of these bottlenecks may impact larger segments of roadway, the segments identified below are the most impacted throughout the year and result in the greatest number of delays. For the purposes of analysis, the top 25 bottlenecks ranked by total delay which combines speed drops, average daily traffic, incidents, among other things in a propriety formula provided by INRIX data within the RITIS Suite. This metric considers the impact of bottlenecks on all vehicles rather than simply individual users. SRPEDD has also examined data for each segment in previous years to analyze those bottlenecks that are reoccurring or may be the result of new construction. A full map of speed trend in areas impacted by each bottleneck can be found [here](#). Additionally, selecting rank numbers in Table 12 will provide access to an interactive map of individual bottlenecks.

Table 12: Top 25 Bottlenecks in the SRPEDD Region During 2021

| Rank | Head Location | Community | Previous Years | Av. Max Length (Miles) | Av. Daily Duration | Total Annual Duration | Total Delay |
|----------|--------------------------|------------|---|------------------------|--------------------|-----------------------|-------------|
| <u>1</u> | I-95 S @ I-495/Exit 12 | Mansfield | 2020 (#131), 2019 (#38), 2018 (#36), 2017 (#2) | 3.56 | 1h 26m | 21d 22h 40m | 133,556,713 |
| <u>2</u> | MA-24 S @ US-44/Exit 20 | Raynham | 2020 (#5), 2019 (#4), 2018 (#8), 2017 (#7) | 3.57 | 54m | 13d 16h 35m | 59,872,592 |
| <u>3</u> | US-1 S @ US-1 Alt | Attleboro | 2020 (#1), 2019 (#8), 2018 (#7), 2017 (#3) | 0.72 | 6h 53m | 104d 17h 28m | 53,228,054 |
| <u>4</u> | MA-24 S @ MA-140/Exit 17 | Taunton | 2020 (#4), 2019 (#5), 2018 (#70), 2017 (#30) | 4.98 | 30m | 7d 15h 34 m | 45,494,844 |
| <u>5</u> | MA-24 N @ I-195/Exit 3 | Fall River | 2020 (#21), 2019 (#173), 2018 (#452), 2017 (#148) | 1.83 | 1h | 15d 6h 41m | 31,449,509 |
| <u>6</u> | I-495 N @ MA-24/Exit 19 | Raynham | 2020 (#14), 2019 (#67), 2018 (#41), 2017 (#90) | 4.76 | 16m | 4d 3h 55m | 28,514,581 |

| Rank | Head Location | Community | Previous Years | Av. Max Length (Miles) | Av. Daily Duration | Total Annual Duration | Total Delay |
|---------------------------|--|--------------------|---|------------------------|--------------------|-----------------------|-------------|
| <u>7</u> | US-6 E @ Hathaway Rd | Dartmouth | 2020 (#10), 2019 (#28), 2018 (#77), 2017 (#35) | 0.59 | 6h 36m | 100d 12h 13m | 24,789,902 |
| <u>8</u> | I-95 S @ Robert Toner Blvd/Exit 7 | North Attleborough | 2020 (#180), 2019 (#1), 2018 (#4), 2017 (#5) | 7.05 | 7m | 1d 19h 50m | 22,889,172 |
| <u>9</u> | US-1 S @ Taunton St | Plainville | 2020 (#6), 2019 (#159), 2018 (#33), 2017 (#28) | 0.24 | 7h 59m | 121d 15h 2m | 18,647,677 |
| <u>10</u> | MA-1A N @ US-1/Washington St | Attleboro | 2020 (#12), 2019 (#40), 2018 (#281) | 0.13 | 7h 52m | 119d 15h 22m | 17,473,953 |
| <u>11</u> | I-495 N @ US-44/Harding St/Exit 15 | Middleborough | 2020 (#46), 2019 (#22), 2018 (#191), 2017 (#21) | 2.69 | 21m | 5d 12h 40m | 15,892,633 |
| <u>12</u> | MA-114A S @ Rhode Island/MA State Line | Seekonk | 2020 (#18), 2019 (#853), 2018 (#849) | 0.18 | 5h 32m | 84d 7h 20m | 15,376,650 |
| <u>13</u> | I-195 E @ Massachusetts/RI State Line | Seekonk | 2020 (#2), 2019 (#2) | 2.42 | 17m | 4d 10h 32m | 15,311,366 |

| Rank | Head Location | Community | Previous Years | Av. Max Length (Miles) | Av. Daily Duration | Total Annual Duration | Total Delay |
|---------------------------|-------------------------------------|-----------|--|------------------------|--------------------|-----------------------|-------------|
| <u>14</u> | US-44 E @ MA-24/Amvets Memorial Hwy | Raynham | 2020 (#3), 2019 (#7), 2018 (#34), 2017 (#26) | 0.42 | 3h 51m | 58d 17h 59m | 14,474,188 |
| <u>15</u> | MA-114A N @ County St | Seekonk | 2020 (#99), 2019 (#834), 2018 (#831), 2017 (#638) | 0.61 | 2h 11m | 33d 8h 52m | 14,398,058 |
| <u>16</u> | MA-114A S @ County St | Seekonk | 2020 (#111), 2019 (#723), 2018 (#724), 2017 (#584) | 1.14 | 1h 52m | 28d 9h 42m | 14,357,823 |
| <u>17</u> | US-44 W @ MA-140/Summer St | Taunton | 2020 (#22), 2019 (#29), 2018 (#24), 2017 (#22) | 0.58 | 3h 33m | 53d 23h 57m | 13,093,542 |
| <u>18</u> | US-6 E @ RI/MA State Line | Seekonk | 2020 (#8), 2019 (#19) | 0.5 | 4h 47m | 72d 23h 45m | 12,624,766 |
| <u>19</u> | Faunce Corner Rd S @ I-195 | Dartmouth | 2020 (#35), 2019 (#45), 2018 (#328), 2017 (#99) | 0.29 | 6h 10m | 93d 23h 47m | 12,501,481 |
| <u>20</u> | MA-24 S @ MA-79 | Freetown | 2020 (#26), 2019 (#30), | 1.39 | 58m | 14d 22h 41m | 10,550,737 |

| Rank | Head Location | Community | Previous Years | Av. Max Length (Miles) | Av. Daily Duration | Total Annual Duration | Total Delay |
|--------------------|---|---------------|--|------------------------|--------------------|-----------------------|-------------|
| | | | 2018 (#11), 2017 (#32) | | | | |
| 21 | I-495 S @ MA-140/Exit 30-31 | Mansfield | 2020 (#292), 2019 (#41), 2018 (#17), 2017 (#159) | 8.5 | 2m | 13h 45m | 9,995,006 |
| 22 | US-44 E @ MA-105/Plympton St | Middleborough | 2020 (#43), 2019 (#23), 2018 (#44), 2017 (#61) | 0.25 | 5h 47m | 88d 4h 59m | 9,103,783 |
| 23 | MA-152 N @ MA-106/Messenger St | Plainville | 2020 (#65), 2019 (#767), 2018 (#767), 2017 (#605) | 0.23 | 5h 5m | 77d 10h 3m | 8,605,073 |
| 24 | US-6 W @ Cross Rd | Dartmouth | 2020 (#15), 2019 (#20), 2018 (#63), 2017 (#55) | 1.26 | 39m | 10d 2h 4m | 8,362,863 |
| 25 | I-195 W @ MA-114A/Fall River Ave/Exit 1 | Seekonk | 2020 (#250) 2019 (#6), 2018 (#21), 2017 (#68) | 5.59 | 4m | 1d 4h 50m | 8,111,887 |

Segments included in the bottleneck analysis included INRIX TMC segments which account primarily for highway traffic conditions and delays. Bottlenecks are combined and represented as segments as traffic develops and are recorded throughout the day. The primary cause of such bottlenecks is when traffic is constrained either by construction, lane closures, car crashes, merging and diverging lanes, or the end of lanes on the highway. Much like pouring liquid out of a bottle, traffic becomes constrained and moves slower than under normal circumstances.

In addition to identifying top bottlenecks by delay, SRPEDD has identified the number of events at each bottleneck that contributed to delays. Reported events occur on all INRIX TMC segments impacted by the bottleneck head and may stretch out of the SMMPO region. These segments are also aggregated when identifying primary causes of congestion. Contrary to what one may assume, recurrent congestion rarely causes more delays than incidents or other factors. This fact becomes apparent when comparing each bottleneck’s top congestion cause to the recurrent congestion total. A table of reported roadway events and primary causes for each bottleneck can be viewed in Table 13:

Table 13: Bottleneck Contributing Factors in 2021

| Rank | Head Location | Community | Agency Reported Events | Top Congestion Category | Recurrent Congestion |
|-------------|--------------------------|------------------|-------------------------------|-------------------------------------|-----------------------------|
| 1 | I-95 S @ I-495/Exit 12 | Mansfield | 97 | Incidents: 37.76% | 0.99% |
| 2 | MA-24 S @ US-44/Exit 20 | Raynham | 33 | Incidents: 42.22% | 3.15% |
| 3 | US-1 S @ US-1 Alt | Attleboro | 41 | Incidents: 46.21% | 16.32% |
| 4 | MA-24 S @ MA-140/Exit 17 | Taunton | 92 | Incidents: 35.74% | 1.37% |
| 5 | MA-24 N @ I-195/Exit 3 | Fall River | 155 | Incidents & Work Zone: 48.69% | 0.36% |

| Rank | Head Location | Community | Agency Reported Events | Top Congestion Category | Recurrent Congestion |
|-------------|--|--------------------|-------------------------------|---|-----------------------------|
| 6 | I-495 N @ MA-24/Exit 19 | Raynham | 22 | Incidents & Work Zone: 28.56% | 0.00% |
| 7 | US-6 E @ Hathaway Rd | Dartmouth | 5 | Signals: 67.12% | 2.99% |
| 8 | I-95 S @ Robert Toner Blvd/Exit 7 | North Attleborough | 314 | Incidents & Work Zone: 32.68% | 0.55% |
| 9 | US-1 S @ Taunton St | Plainville | 3 | Signals: 53.24% | 0.06% |
| 10 | MA-1A N @ US-1/Washington St | Attleboro | 1 | Unclassified: 36.79%, Recurrent 27.29% | 27.29% |
| 11 | I-495 N @ US-44/Harding St/Exit 15 | Middleborough | 15 | Incidents: 36.61% | 0.00% |
| 12 | MA-114A S @ Rhode Island/MA State Line | Seekonk | 13 | Signals: 30.87% | 9.28% |
| 13 | I-195 E @ Massachusetts/RI State Line | Seekonk | 257 | Incidents & Work Zone: 25.95% | 0.00% |

| Rank | Head Location | Community | Agency Reported Events | Top Congestion Category | Recurrent Congestion |
|-------------|-------------------------------------|------------------|-------------------------------|---|-----------------------------|
| 14 | Us-44 E @ MA-24/Amvets Memorial Hwy | Raynham | 3 | Signals: 40.33% | 13.72% |
| 15 | Ma-114A N @ County St | Seekonk | 0 | Signals: 73.41% | 3.30% |
| 16 | MA-114A S @ County St | Seekonk | 11 | Signals: 49.65% | 0.00% |
| 17 | US-44 W @ MA-140/Summer St | Taunton | 7 | Signals: 39.79% | 4.35% |
| 18 | US-6 E @ RI/MA State Line | Seekonk | 38 | Signals: 53.54% | 5.05% |
| 19 | Faunce Corner Rd S @ I-195 | Dartmouth | 1 | Signals: 76.14% | 0.00% |
| 20 | MA-24 S @ MA-79 | Freetown | 114 | Incidents: 33.84% | 1.24% |
| 21 | I-495 S @ MA-140/Exit 30-31 | Mansfield | 201 | Incidents: 31.26% | 1.00% |
| 22 | US-44 E @ MA-105/Plympton St | Middleborough | 2 | Unclassified: 54.58%, Signals 23.11% | 0.00% |
| 23 | MA-152 N @ MA-106/Messenger St | Plainville | 1 | Unclassified: 76.43%, | 0.00% |

| Rank | Head Location | Community | Agency Reported Events | Top Congestion Category | Recurrent Congestion |
|------|---|-----------|------------------------|----------------------------------|----------------------|
| | | | | Holiday 9.04% | |
| 24 | US-6 W @ Cross Rd | Dartmouth | 2 | Signals: 75.71% | 0.95% |
| 25 | I-195 W @ MA-114A/Fall River Ave/Exit 1 | Seekonk | 84 | Incidents & Work Zone: 29.53% | 0% |

Environmental Justice

Environmental Justice (EJ) is based on the principle that all people have a right to be protected from environmental hazards and to live in and enjoy a clean and healthful environment³. To address issues of equity in transportation, SRPEDD has used congestion mitigation data to identify those locations where congestion may be having an undue impact on EJ populations. In Massachusetts, this includes the following populations:

- Annual median household income is 65 percent or less of the statewide annual median household income
- Minorities make up 40 percent or more of the population
- 25 percent or more of households identify as speaking English less than "very well"
- Minorities make up 25 percent or more of the population and the annual median household income of the municipality in which the neighborhood is located does not exceed 150 percent of the statewide annual median household income

³ [https://www.mass.gov/environmental-justice#:~:text=Environmental%20Justice%20\(EJ\)%20is%20based,a%20clean%20and%20healthful%20environment](https://www.mass.gov/environmental-justice#:~:text=Environmental%20Justice%20(EJ)%20is%20based,a%20clean%20and%20healthful%20environment)

When examining the proximity of EJ block groups with bottleneck areas it was found that in 2021:

- 9 EJ block groups were within 0.25 miles of a bottleneck origin point
- 13 EJ block groups were within 0.5 miles of a bottleneck origin point
- 81 EJ block groups were within 0.25 miles of non-interstate travel time reliability problem areas
- 130 EJ block groups were within 0.5 miles of non-interstate travel time reliability problem areas

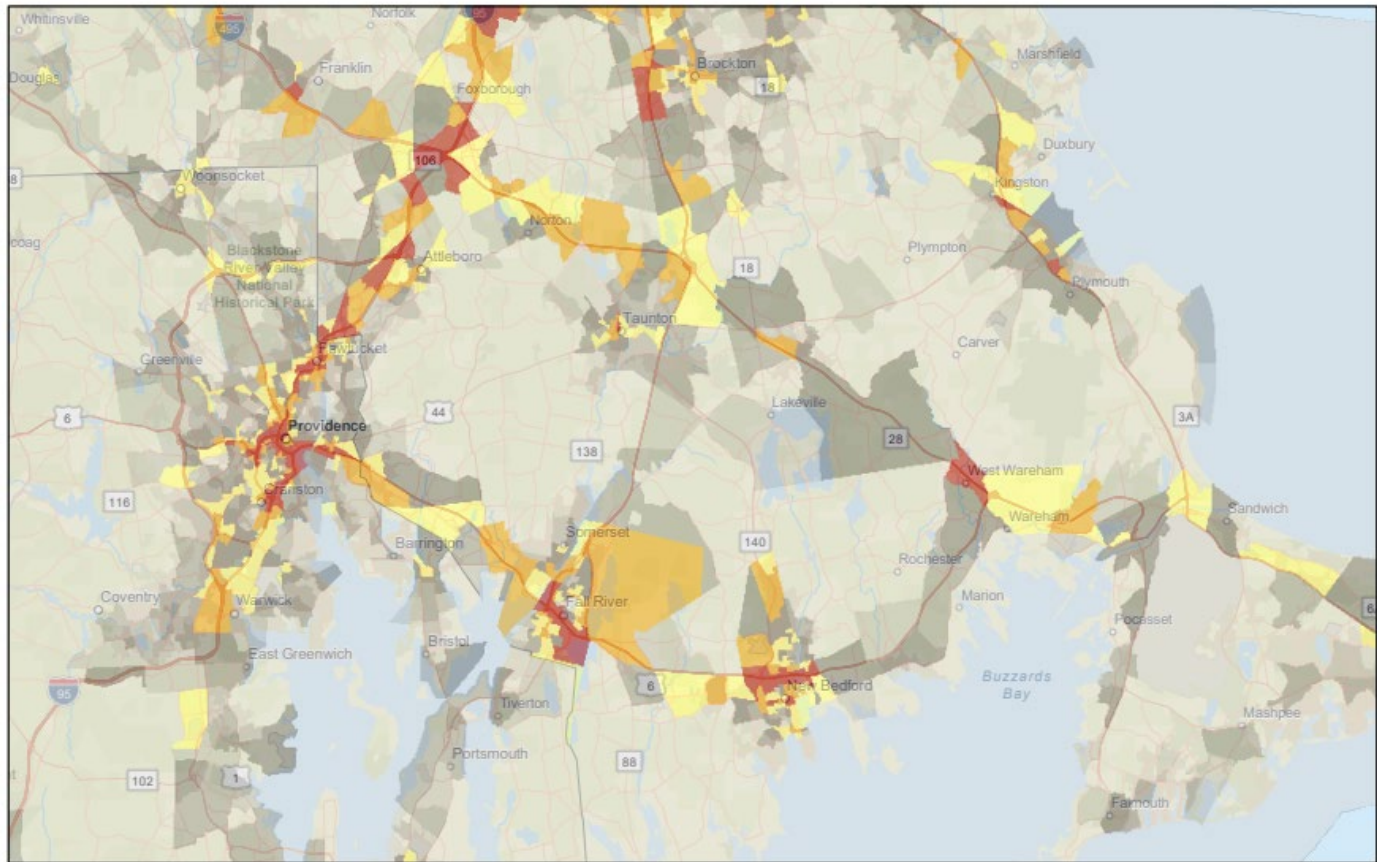
Due to the negative air quality impacts of congestion, it seems essential to identify areas where congestion impacts EJ populations. The United States Environmental Protection Agency (EPA) provides the EJScreen tool to determine those areas that may be most negatively impacted by traffic proximity. [This tool](#) is accessible to the public and free to use.

Many communities in the SMMPO region are especially susceptible to the impacts of proximity to traffic and congestion. This metric includes the count of vehicles per day (average annual daily traffic) at major roads within 500 meters (or nearest one beyond 500 m), divided by distance in meters.⁴ This includes census tracts in New Bedford, Fall River, Taunton, Raynham, Wareham, Norton, Mansfield, among others. Higher percentiles indicate greater risk of adverse health conditions associated with congestion. A full map can be viewed on the following page.

⁴ <https://www.epa.gov/ejscreen/ejscreen-map-descriptions#poll>

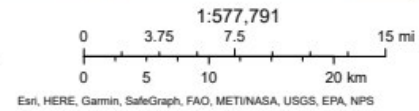
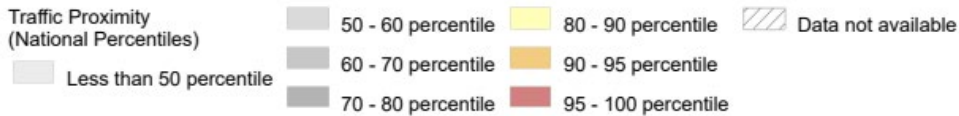
Map 1: Census Tract Map of SRPEDD Region Traffic Proximity Risk

SRPEDD Region Traffic Proximity Risk



1/25/2023

Traffic Proximity
(National Percentiles)



Continued Monitoring of the CMP Network

To account for changes in congestion patterns throughout the SMMPO region, SRPEDD staff intends to perform the following tasks to better monitor the congestion management network:

- Review RITIS information concerning interstate and non-interstate travel time reliabilities as needed
- Review RITIS information concerning bottleneck locations as needed
- Continue efforts with turning movement counts and automatic traffic recorders to maintain accurate volume and level of service estimates for the SRPEDD region
- Use available and existing data to update and maintain the SRPEDD transportation demand model to forecast congestion trends into the future

Strategies for Congestion Management

To fully address lingering congestion issues throughout the SMMPO region, there are several strategies that are currently being employed by SRPEDD to address congestion problem areas throughout the region including:

- Continued use of Transportation Improvement Plan (TIP) funds for projects that address congestion through the TIP evaluation criteria process
- Completion of corridor studies throughout the region
- Participation in Road Safety Audits (RSAs)

While SRPEDD is currently actively pursuing opportunities to alleviate congestion throughout the region there are several strategies that may be employed in the future to improve upon existing congestion:

- Creation of congestion reports to identify areas in need of improvement as needed
- Prioritization of future projects that involve the expansion of transit, bicycle, and pedestrian opportunities for road users to shift mode share away from single-occupancy vehicle use
- Maintenance of travel demand model, signalized intersection database, and traffic count information
- Promotion and implementation of intelligent transportation system measures such as approach and departure technology at signalized intersections, variable speed management systems, continued monitoring of transportation with tools like RITIS

- Creation and maintenance of bus-only lanes to prioritize on-time performance for public transit

Planned Congestion Improvement Projects

The Transportation Improvement Program (TIP) is a requirement of the Metropolitan Transportation Planning Process as described in the Metropolitan Planning Final Rule 23 CFR 450 section 324. The SMMPO is required to carry out a continuing, cooperative, and comprehensive performance-based regional multimodal transportation planning process, including the development of a long-range regional transportation plan (RTP) and TIP, that facilitates the safe and efficient management, operation, and development of surface transportation systems that will serve the mobility needs of people and freight (including accessible pedestrian walkways, bicycle transportation facilities, and intermodal facilities that support intercity transportation, including intercity bus facilities and commuter van pool providers) and that fosters economic growth and development and takes into consideration resiliency needs while minimizing transportation-related fuel consumption and air pollution.

The SMMPO developed a process and set of criteria to evaluate and prioritize the region's TIP projects. All projects included in the TIP have been evaluated and assigned a priority value or score. This process is used as a management tool to identify projects of regional priority and program them accordingly in the TIP. Each project is reviewed to evaluate the impact on, or sensitivity to, each of the criteria categories including Community Impact and Support, Maintenance and Infrastructure, Safety and Security, Mobility / Congestion, Livability / Sustainable Development, and Environmental and Resiliency, as well to assist in meeting performance targets for safety, pavement preservation, mobility, freight movement, traffic congestion and emissions. Through the evaluation criteria, we highlight and provide higher rankings to projects that have been identified in our RTP to ensure that existing and future needs of the regional transportation system are prioritized, as well as advance federal transportation planning factors. Projects that address multiple categories are more likely to score higher points and be prioritized for construction. In total, there are 100 possible points that can be assigned to each project, but 20 of those points can be awarded specifically for congestion management.

Table 14: Current TIP Projects Involving Congestion Mitigation

| TIP Year | Project Description | Congestion Evaluation Criteria Points (Out of 20) |
|-----------------|---|--|
| 2023 | New Bedford- Corridor Improvements and Related Work on County Street from Nelson Street to Union Street | 10 |
| 2024 | Taunton- Corridor Improvements and Related Work on Broadway (Route 138), From Purchase Street to Jackson Street (Phase 2) | 11 |
| 2024 | Mansfield- Reconstruction on Chauncy Street (Route 106) | 12 |
| 2025 | Mansfield- Corridor Improvements and Related Work on School St, From Spring St to West St | 9 |
| 2027 | Mansfield- Chauncy Street (Route 106) Improvements (Phase 2) | 12 |

In addition to TIP funding for projects in the SRPEDD region, Congestion Mitigation and Air Quality Improvement Program (CMAQ) funding is available to diver the negative impact of congestion on communities. CMAQ provides federal funding for states to support projects and programs intended to improve air quality and reduce traffic congestion. CMAQ funds (80 percent federal / 20 percent non-federal) are used for transportation programs and projects that will contribute to the attainment of a National Ambient Air Quality Standard in ozone, small particulates matter and carbon monoxide non-attainment areas.⁵ The combination of these funding sources allow for projects related to congestion mitigation to happen with greater ease. Table 15 displays those projects in the SMMPO Region that have utilized or may use CMAQ funds for at least part of their funding.

⁵ <https://www.mass.gov/doc/statewide-funding-programs-and-categories/download>

Table 15: Current FY 2023-2027 CMAQ Projects

| Year | Community | Project Description |
|------|---------------|--|
| 2023 | Rehoboth | Intersection Improvements and Related Work at Winthrop Street (Route 44) and Anawan Street (Route 118) |
| 2023 | Mansfield | New Airport Express Bus Service from the Mansfield MBTA Station to Logan Airport |
| 2023 | Marion | Shared-Use Path Construction (Phase 1), From the Marion-Mattapoissett Town Line to Point Road |
| 2024 | Dartmouth | Corridor Improvements on Route 6, From Faunce Corner Road to Hathaway Road |
| 2024 | Taunton | Corridor Improvements and Related Work on Broadway (Route 138), From Purchase Street to Jackson Street (Phase 2) * |
| 2025 | Lakeville | Reconstruction and Related Work on Rhode Island Road (Route 79) from the Taunton City Line to Clear Pond Road |
| 2025 | Wareham | Shared-Use Path Construction Adjacent to Narrows Road and Minot Avenue* |
| 2026 | Mattapoissett | Corridor Improvements and Related Work on Main Street, Water Street, Beacon Street and Marion Road |
| 2027 | Dartmouth | Corridor Improvements on Dartmouth Street and Prospect Street |

***Projects anticipating CMAQ Eligibility**

In addition to projects being eligible for CMAQ funding, a study was completed in 2021 by SRPEDD to address changes in peak-hour congestion trends at the intersection of County Street and Hart Street that was improved partially utilizing CMAQ funding. With

several other projects slated for CMAQ funding in coming years, this may be a tool to analyze the success of these projects especially through the lens of congestion management. The study referenced above is available [here](#).

Recommendations and Next Steps

This Congestion Management Plan recommends the following to reduce congestion and improve air quality in the region:

- Continue to develop a planning and operational traffic database, using the evaluation criteria process to prioritize and support the design and construction of all planned congestion mitigation projects in the region
- Continue to aid communities with access management issues to improve safety and congestion along high traffic corridors
- Continue to utilize existing real-time and historic traffic data to identify areas of critical concern for current and future congestion trends and create congestion reports to address travel time reliability and monitor trends throughout the SMMPO region as needed
- Promote and implement the use of Electric Vehicle charging stations at parking facilities to help in addressing air quality issues associated with traffic congestion
- Encourage land-use and development decisions consistent with providing a variety of transportation options to reduce the number of individual motor vehicles on roadways
- Identify commonly congested corridors that inhibit fixed route transit services from meeting their on-time performance
- Encourage the implementation and use of new technologies that extend the green time of signals to allow public transit buses to meet their scheduled stops