



MEMO

TO: BOSTON TRANSPORTATION DEPARTMENT & PUBLIC WORKS
DATE: JANUARY 21, 2021
SUBJECT: TRAFFIC COUNTS DURING AND POST-PANDEMIC

SUMMARY

A brief summary of the policy recommendations:

- Purpose of traffic counts must be clearly defined at the start of projects.
- BTD will no longer use background vehicle growth rates not associated with new development over time during or after the pandemic.
- Future build scenarios should incorporate forecasting trip generation rates for multimodal trips including vehicles, bicycles, pedestrians, transit, and, where possible, taxis and transportation network companies. New developments within half mile of the project or corridor study area should be incorporated into future build scenarios.
- Until Spring 2021, transportation consultants and project managers may:
 - Use old nearby counts and observations from January 2017 until February 2020 for projects in areas that have seen significant change in traffic patterns since the start of the pandemic.
 - When there are no nearby counts from previous years available and new traffic counts are not possible due to the pandemic, user-generated traffic data may be used.
 - All methodologies that use old observations or data must be reviewed and approved by BTD.
- In Spring of 2021, BTD will determine when new counts can begin again by comparing 2019 and 2021 counts at 12 intersections throughout the city.
- New traffic counts should be conducted as follows:
Automatic Traffic Recorder:
 - Counts number of vehicles, bicycles, and pedestrians passing through a given point on a corridor
 - Collect vehicle speeds.
 - ATR counts must be taken in 15 min increments with full vehicle classification between 7 AM and 6 PM for a period of 48 - 72 hours



- Typical weekdays: Tuesday, Wednesday, and/or Thursday between the second week of September and November 15 or between April 1 to June 15 when feasible.
- Counts for retail corridors and projects counts must also include a 24 hour Saturday period
- May not be conducted on Boston Public Schools (BPS) vacations, holidays, parades, construction or abnormal weather conditions
- Near North Station and Fenway, counts should occur both on a gameday/concert day and non-gameday/concert day

Turning Movement Counts (TMC)

- TMCs show existing multimodal volumes and their conflict with each other at intersections.
- Must be collected on all signalized and unsignalized intersections in the study area as directed by BTM.
- Must be collected in 15 min increments with full vehicle classification between 7 AM and 6 PM for a period of 48 - 72 hours (can be the same as ATR counts) when feasible. At minimum, a TMC will be typically counted for a single day supplemented by ATR data for 48-72 hours.
- Typical weekdays: Tuesday, Wednesday, and/or Thursday between the second week of September and November 15 or between April 1 to June 15 when feasible.
- Counts for retail corridors and project counts must also include a 24 hour Saturday period
- Should not be conducted on Boston Public Schools (BPS) vacations, holidays, parades, construction or abnormal weather conditions
- Near North Station and Fenway, counts should occur both on a gameday/concert day and non-gameday/concert day
- TMC summaries must include any off-phase crossings for bicycles, pedestrians, and conflicting vehicle turning movements when collected as part of a Vision Zero safety study. Existing traffic volumes if not older than 5 years, signal timing, and phase sequence data can be obtained from [ScerIS CM](#).

INTRODUCTION

This policy memo outlines a traffic counts methodology during and post-pandemic, guided by the following principles:

- We should design for the future we want and outlined in GoBoston 2030, rather than the future models tell us we are going to have,
- Our current practice of applying growth rates to vehicle counts over time is contrary to our aspirational mode split goals,
- Define the purpose of conducting traffic counts and be clear about how counts will be used to determine mitigation,



- Given the ongoing pandemic, we need thresholds that can be used to provide guidance on how to conduct new traffic counts

POLICY RECOMMENDATIONS

The City of Boston's long term goals and plans to improve safety, decrease emissions, and increase multimodal access informs the following policy recommendations.

Below are recommendations for traffic counts methodology during and after a pandemic:

1. Before conducting traffic counts, define the purpose and goal of conducting vehicular traffic counts and turning movement counts.

There are many reasons why vehicular traffic counts are conducted including, but not limited to:

- Calculate a corridor's existing total person throughput,
- Improve signal timing for pedestrians, bicyclists, transit, and vehicles,
- Criteria to help determine appropriate traffic calming and road dieting measures to increase safety for all street users,
- Criteria to help determine if separate phases or physical protection is needed,
- Criteria to help determine bicycle level of traffic stress along a corridor
- Criteria to determine if an intersection meets minimum criteria for installation of a traffic signal.

2. Remove "background" vehicle growth rates from assumptions and calculations during and after the pandemic.

"Background" vehicle growth rates, or growth rates not associated with new development, vary widely from year to year and using a single, consistent percentage over ten years does not consider decreases in vehicular traffic and increases in other modes. MassDOT historical growth rate data demonstrate traffic data varies greatly from year to year. Background growth rates are separate from forecasting trip generation using the methodology associated with new development.

Further analysis of Boston's local roads also reveals a wide variety of changes in traffic volumes. Brighton Avenue's vehicular traffic volumes have been steadily decreasing since 2016. Corridors with bus priority lanes have seen decreases in volumes not captured by growth rates. With the introduction of the Silver Line, Washington Street saw an 18% decrease in vehicular traffic within the first five years of the bus lane being fully operational. Corridors without bus priority lanes have also seen different degrees of changes in vehicular traffic volumes, none of which have been consistently growing at the same rate for ten years.

A single city-wide percentage used over a decade assumes a consistency that does not exist in vehicular traffic volumes.



3. Incorporate multimodal trip generation rates associated with new developments within half mile of the project area.

Future build scenarios should incorporate forecasting trip generation rates for multimodal trips including vehicles, bicycles, pedestrians, transit, and, where possible, taxis and transportation network companies. New developments within half mile of the project or corridor study area should be incorporated into future build scenarios.

4. Between November 2020 and Spring 2021, any traffic studies conducted may include older traffic counts in lieu of new counts using one of two options, depending on data availability:

A. *Previously collected counts and observations:* Projects may use past traffic counts of nearby intersections near the study area from January 2017 to February 2020. Counts older than 2017 may be considered in areas where there have been no substantial developments or transportation projects. Past traffic counts can be viewed at [Traffic-Related Data - Datasets - Analyze Boston](#).

B. *User-generated data:* If nearby past counts are not available or are obsolete, and new traffic counts are not possible, user-generated traffic data from the same period (January 2017 to February 2020) may be used. User-generated traffic data is defined as data that is aggregated from cell phones, navigation devices in vehicles, and/or other sources.

BTD will determine if any adjustments are necessary based on the reliability and quality of data being used. User generated data often account for a fraction of the actual volume of traffic and should be used judiciously. All assumptions, calculations, data sources, and methodology used must be carefully documented and submitted to BTD for review before using counts to determine mitigation.

5. Identify when and where new traffic counts may be conducted.

In order to determine when to start new traffic counts, a comparison must be made between the pre-pandemic and pandemic era vehicular traffic counts. Starting early Spring 2021, BTD will select up to 12 control-intersections across the City for which there already exist 2019 counts. BTD will conduct traffic counts at those same intersections and compare the 2019 counts with Spring 2021 counts.

If the gap is low: If the difference between 2019 counts and Spring 2021 counts is low (i.e. less than 30% difference) then new traffic counts may be conducted in the area or neighborhood adjacent to the control intersection. New traffic counts should be conducted in accordance with BTD's Data Collection Standards (recommendation #5).

If the gap is high: If the difference between 2019 counts and Spring 2021 counts is high (i.e. more than 30% difference), then using older counts as outlined in recommendation #3 will be permissible in the area or neighborhood adjacent to the control intersection.

6. Conducting new traffic counts: Multimodal volume counts and turning movement counts (TMC)



New traffic counts must be conducted in accordance with the City’s “Data Collection Standards - Existing Conditions.” Specifications for new traffic counts is found on page one of this memo.