



# REPORT TO COUNCIL

To: **Mayor and Councillors**

Subject: Speed Reader Board Traffic Data Collection and Analysis

File #: 5210.00

Doc #:

From: Cameron Perkin  
Engineering Technologist

Date: May 10, 2021

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## RECOMMENDATION:

THAT Council receives the "Speed Reader Board Traffic Data Collection and Analysis" report for information

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## PURPOSE:

The purpose of this report is to present analyses of traffic speed data collected by speed reader boards (SRBs) installed in a variety of locations throughout Langley City.

## POLICY:

None.

## COMMENTS/ANALYSIS:

### Background & Data:

In response to complaints from residents regarding excessive vehicular speeds at different locations in the City, Council passed a motion directing staff to collect traffic data from SRBs throughout Langley City to monitor and analyze traffic speeds.

### *Figure 1: Speed Reader Board Locations*

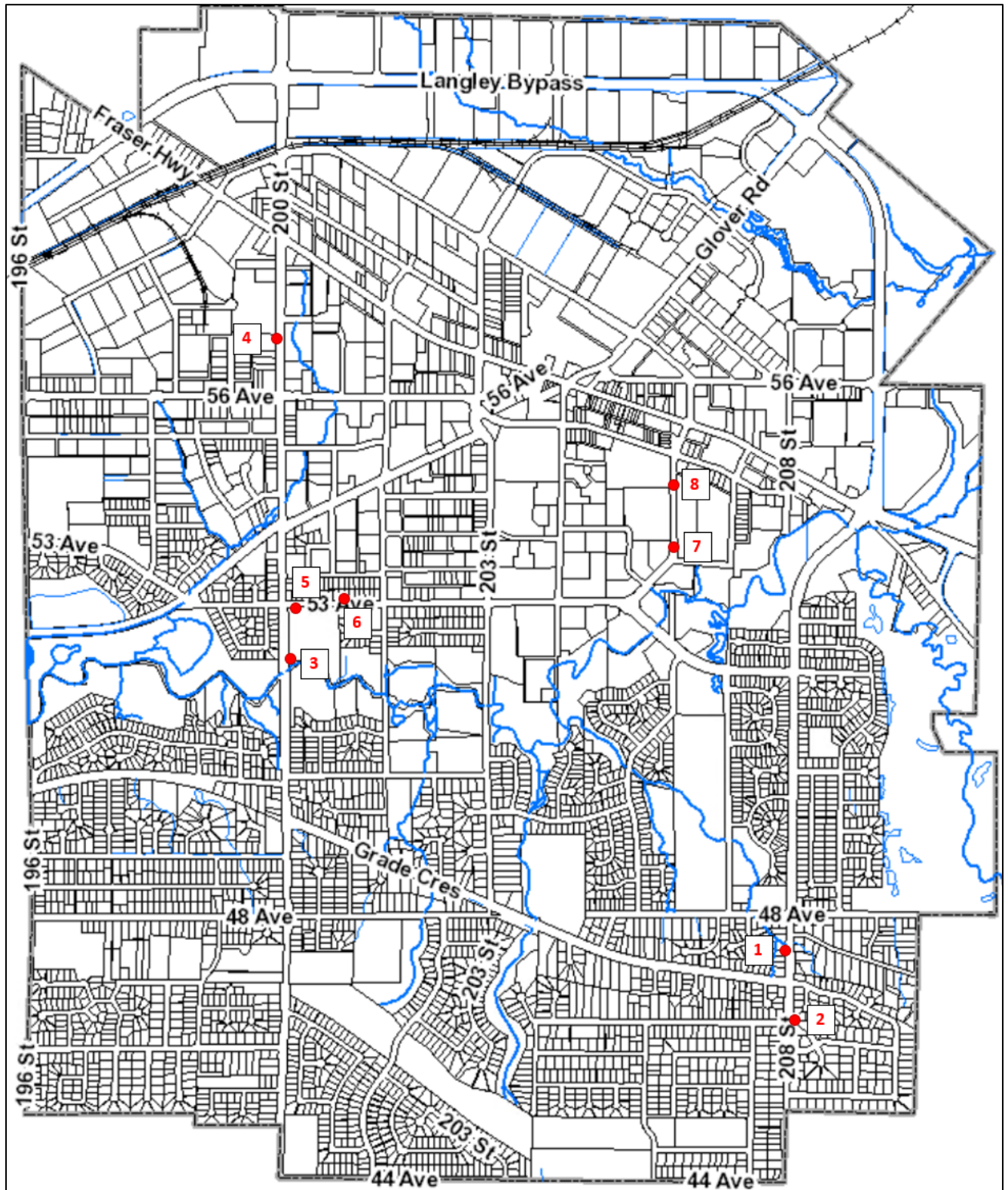
This report summarizes staff's traffic speed analyses at the following eight (8) locations presented in **Figure 1** and listed on below:

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1. Southbound - 208 Street between Grade Crescent and 48 Avenue
2. Northbound - 208 Street north of 45A Avenue
3. Northbound - 200 Street between 53 Avenue and 50 Avenue
4. Southbound - 200 Street between Fraser Highway and 56 Avenue
5. Eastbound - 53 Avenue east of 200 Street
6. Westbound - 53 Avenue west of 201A Street
7. Northbound - 206 Street at 53A Avenue
8. Southbound - 206 Street at Douglas Park

To complete the analyses, the following types of traffic speeds statistics were compiled:

- Average speeds – the mean speed at which vehicles are observed to travel.
- 85<sup>th</sup> percentile speeds – the speed at or below which 85 percent of all vehicles are observed to travel. Generally, speeds are not deemed excessive if the 85<sup>th</sup> percentile speed does not exceed 10km/h of the posted speed limit. Traffic engineers often use 85<sup>th</sup> percentile speed when determining if speeding is a concern along a road.

The results are presented in *Error! Reference source not found.* More detailed results are also presented in **Appendix A**.

**Table 1: Speed Reader Board Traffic Speed Data**

No.	Location	Speed Limit	Average Speed	85 <sup>th</sup> Percentile Speed	Is Speeding an Issue (Yes/No)
1	Southbound 208 Street between Grade Crescent and 48 Avenue	50	49	63	Yes
2	Northbound 208 Street north of 45A Avenue	50	59	68	Yes
3	Northbound 200 Street between 53 Avenue and 50 Avenue	50	63	72	Yes
4	Southbound 200 Street between Fraser Highway and 56 Avenue	50	57	66	Yes
5	Eastbound 53 Avenue east of 200 Street	30	24	41	Yes
6	Westbound 53 Avenue west of 201A Street *	30	35	48	Yes *
7	Northbound 206 Street at Douglas Park	30	27	38	Marginally
8	Southbound 206 Street at 53A Avenue	30	30	39	Marginally

**Notes:**

\* This SRB is located just outside the eastern edge of the school zone. It is measuring speeds in the transition zone, that is between the 30 km/h and 50 km/h speed limit so the actual speeds may be higher. Additional data should be collected within the school zone if speeding is felt to be a concern at this location.

## **Discussion:**

### Arterial Road Vehicle Speeds

As noted in *Error! Reference source not found.*, along arterial roads (i.e., 200 Street and 208 Street) average vehicle speeds were found to be approximately 10 km/h above the speed limit indicating that a large portion of traffic is consistently speeding in these areas. Furthermore, 85<sup>th</sup> percentile vehicle speeds at all arterial road locations were at least 15 km/h above the speed limit indicating that a relatively large portion of traffic is consistently travelling at speeds well above the speed limit. A factor to consider is that the speed limit may be set too low for the road design and conditions. This is beyond the scope of this report but a speed limit increase could be considered subject to a thorough safety review being completed.

### School Zone Vehicle Speeds

Compared to arterial roads, speeding is more limited along roads which feature school zones and speed humps (e.g., 206 Street and 53 Avenue). *Error! Reference source not found.* indicates that the average vehicle is travelling approximately 30km/h and the 85<sup>th</sup> percentile speed is approximately 40km/h along 206 Street and 53 Avenue. This indicates that the majority of vehicles are travelling within 10km/h of the speed limit.

Westbound 53 Avenue does note an 85<sup>th</sup> percentile of 48km/h which is well above the 30 km/h speed limit; however, the SRB is recording vehicle speeds just outside the school zone limits, so technically it is in the 50 km/h speed zones. Thus, this result is not unexpected.

### Use of SRB Data

The speed data in this report gives a general indicator of vehicle speeds along four corridors within the City of Langley. Subject to how the data will be used, e.g. before implementing capital improvements, traffic calming, etc. it would be recommended to collect additional site specific data.

Speeds are quite high even with SRB's to notify motorists of their speed. For this reason the SRB's are meant to be relocated on a semi-frequent basis (3-6 months) so there is a higher likelihood of drivers taking notice of the SRB's. This is being done more regularly now in the City.

### Possible Next Steps

It is understood that Council requested this report as a result of speeding issues that they either witnessed themselves or received through resident complaints. The SRB information provides actual speed data which may be used by Council and staff in several ways such as:

- Staff discussion points with RCMP to inform them where speed traps should be considered.
- For discussion at monthly City/RCMP/Bylaw meetings to brainstorm possible solutions
- Provides information for Council to facilitate discussions with the province on speed concerns to seek alternative methods to manage speeds other than traditional RCMP speed traps which is costly and uses resources that have many other demands.
- For consideration of speed limit adjustments.

Staff will undertake to complete the first two bullets. A speed limit review could be completed however would require funding to complete a thorough safety review. If this is something Council wishes, a budget could be put forward for consideration in 2022.

### **BUDGET IMPLICATIONS:**

There are no financial implications associated with this report.

Respectfully Submitted,



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Cameron Perkin, EIT.  
Engineering Technologist

Concurrence:



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Hirod Gill, P.Eng.  
Manager of Engineering Services

Reviewed by,



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Rick Bomhof, P.Eng.  
Director of Engineering, Parks & Environment

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## Appendix A: Traffic Data Graphs and Tables

### CHIEF ADMINISTRATIVE OFFICER'S COMMENTS:

Reviewed by,



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Francis Cheung, P. Eng.  
Chief Administrative Officer

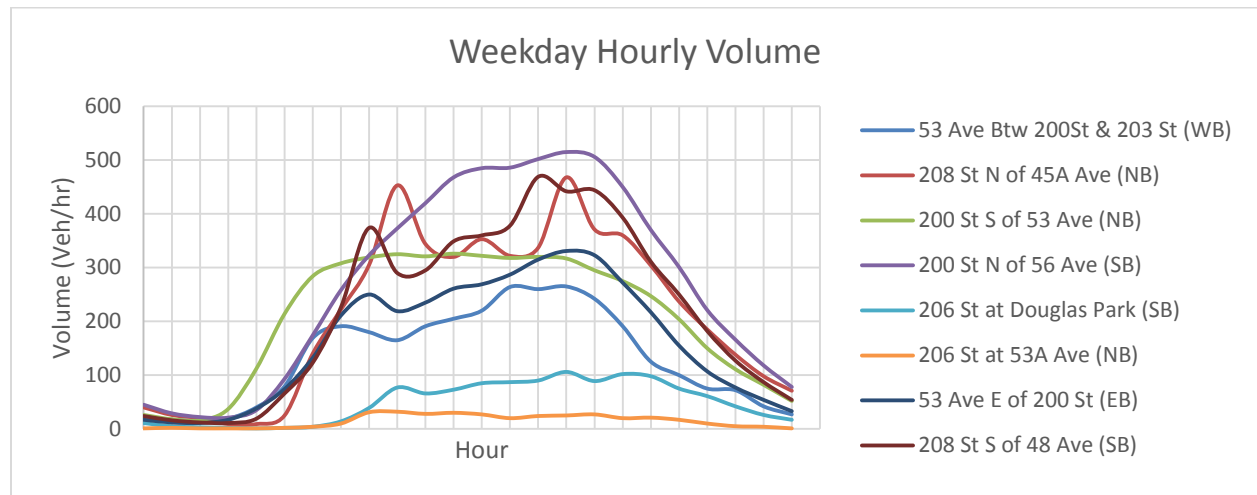


Appendix A: Traffic Data Graphs and Tables

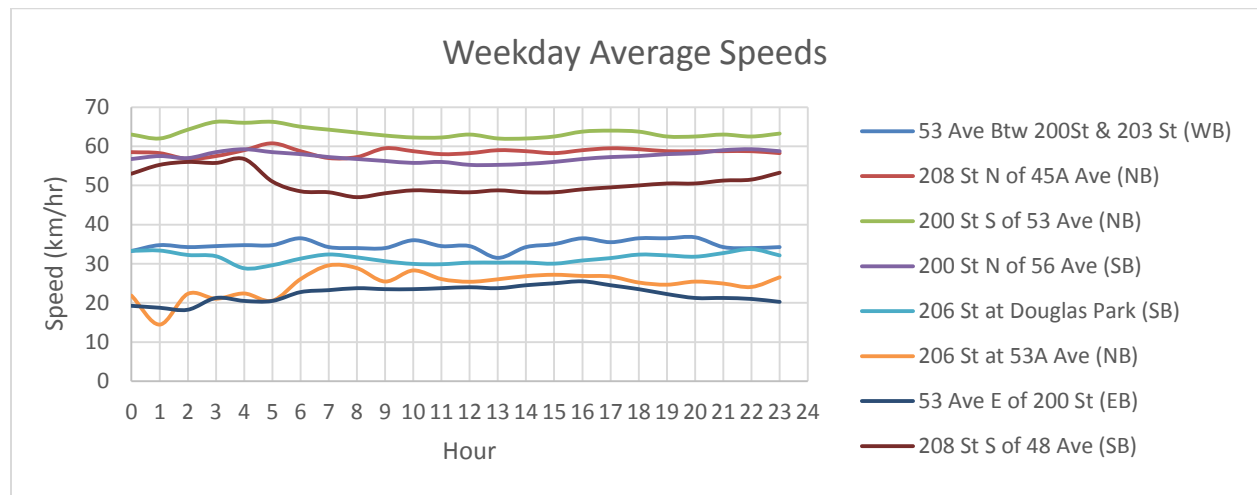
Summarized Traffic Data Table

No.	Location	Road Classification	Speed Limit (km/h)	Average Speed (km/h)	85 <sup>th</sup> Percentile Speed (km/h)	Daily Traffic Volumes (veh/day)	Notes	Commentary
1	Southbound 208 Street between Grade Crescent and 48 Avenue	Arterial	50	49	63	5,300	The traffic signal at 48 Avenue and 208 Street will impact vehicle speeds when amber or red. Free-flow travel speeds are likely slightly higher than reported in this table.	<p>The average speed at this location is 1 km/h below the speed limit and the 85<sup>th</sup> percentile speeds are 13 km/h over the speed limit.</p> <p>This indicates that most drivers are travelling within 10 km/h of the speed limit but that speeding is an issue and that 15% of traffic is speeding over 13 km/h above the limit.</p>
2	Northbound 208 Street north of 45A Avenue	Arterial	50	59	68	5,155	None.	<p>The average speed is 9 km/h above the speed limit and 85<sup>th</sup> percentile speeds are 18 km/h over the speed limit at this location.</p> <p>This indicates that a much higher percentage of traffic is speeding and a large portion of traffic is travelling at speeds significantly above the speed limit.</p>
3	Northbound 200 Street between 53 Avenue and 50 Avenue	Arterial	50	63	72	5,000	None.	<p>The average speed is 13 km/h above the speed limit and 85<sup>th</sup> percentile speeds are 22 km/h over the speed limit at this location.</p> <p>This indicates that a much higher percentage of traffic is speeding and a large portion of traffic is travelling at speeds significantly above the speed limit.</p>
4	Southbound 200 Street between Fraser Highway and 56 Avenue	Arterial	50	57	66	6,460	None.	<p>The average speed is 7 km/h above the speed limit and 85<sup>th</sup> percentile speeds are 16 km/h over the speed limit at this location.</p> <p>This indicates that a higher percentage of traffic is speeding and a significant portion of traffic is travelling at speeds well above the speed limit.</p>
5	Eastbound 53 Avenue east of 200 Street	Collector	30	24	41	3,915	The speed data shown in this table only includes data from school hours (8am – 5pm) as this SRB is located in a school zone.	<p>The average speed is 6 km/h below the speed limit and 85<sup>th</sup> percentile speeds are 11 km/h over the speed limit at this location.</p> <p>This indicates that most traffic is driving at or below the speed limit. However, 15% of traffic is travelling 11 km/h or more above the speed limit.</p>
6	Westbound 53 Avenue west of 201A Street	Collector	30	35	48	3,175	<p>The speed data shown in this table only includes data from school hours (8am – 5pm) as this SRB is located near a school zone.</p> <p>This SRB is located at the eastern edge of the school zone. It is measuring speeds in the transition zone between the 30 km/h and 50 km/h speed limit. Speeds may be closer to 50km/h as a result.</p>	<p>The average speed is 5 km/h above the speed limit and 85<sup>th</sup> percentile speeds are 18 km/h over the speed limit at this location.</p> <p>This indicates that most traffic is driving around or slightly above the speed limit. However, 15% of traffic is travelling 18 km/h or more above the speed limit. As this SRB is measuring speeds in the transition zone between 30 km/h and 50 km/h speed limits, speeding is likely less pervasive in this area than presented by this table.</p>
7	Northbound 206 Street at Douglas Park	Collector	30	27	38	345	The speed data shown in this table only includes data from school hours (8am – 5pm) as this SRB is located in a school zone.	<p>The average speed is 3 km/h below the speed limit and 85<sup>th</sup> percentile speeds are 8 km/h over the speed limit at this location.</p> <p>This indicates that most traffic is driving at or below the speed limit and 15% is travelling 8 km/h or more above the limit.</p>
8	Southbound 206 Street at 53A Avenue	Collector	30	30	39	1175	The speed data shown in this table only includes data from school hours (8am – 5pm) as this SRB is located in a school zone.	<p>The average speed is equal to the speed limit and 85<sup>th</sup> percentile speeds are 9 km/h over the speed limit at this location.</p> <p>This indicates that most traffic is driving at or near the speed limit and 15% is travelling at 9 km/h or more above the limit.</p>

## Weekday Hourly Traffic Volumes



## Weekday Average Speeds



## Weekday 85th Percentile Speeds

