Enclosure 1

Jim Common Drive Traffic Calming Project

Evaluation Report

Jim Common Drive Traffic Calming Project

July 2019

Executive Summary

In 2016, a traffic calming and management project was initiated for Jim Common Drive (JCD) South and North. This project was initiated in advance of upcoming road rehabilitation based on resident concerns with traffic speed and pedestrian safety which was also substantiated by collected speed data that indicated traffic speeds were in excess of the 50 km/h speed limit.

Upon the completion of thorough engineering review and public engagement process, traffic calming and management features were installed on JCD South and North during the 2017 scheduled rehabilitation of the roads. Now that the traffic features have been in place for over a year, Strathcona County is conducting a comprehensive evaluation of the public engagement process and a preliminary evaluation of the traffic impact outcomes of the project.

Public engagement for this initiative was conducted at the "Listen and Learn" level. All residents of Strathcona County were provided with an opportunity to participate in both phases of the public engagement undertaken for this project, although those in the neighbourhoods of Clover Bar Ranch and Charlton Heights, as well as nearby condominium complexes off JCD South were most aggressively recruited.

Based upon public engagement, resident priorities for JCD South were:

- Reduce traffic speeds
- Improve pedestrian safety
- Improve sightlines at intersections
- Discourage shortcutting
- Maintain traffic flow
- Minimize traffic noise

Based upon engineering review, engineering goals for JCD South were:

- Decrease traffic speeds
- Improve sightlines at Cranford Drive
- Decrease pedestrian risk at Crystal Lane (high number of vulnerable road users)
- Improve intersection safety at Brower Drive (due to collision history)

Based on public engagement, resident priorities for JCD North were:

- Improve pedestrian safety at trail crossing on southern end of the road and near the playground
- Reduce traffic speeds, particularly at the playground
- Manage parking concerns at the playground (parking too close to crosswalks, corners)

Based upon engineering review, engineering goals for JCD North were:

- Decrease traffic speeds near the trail crossing and at the playground (during effective hours)
- Clarify parking at the playground
- Create a single crosswalk at Canyon Drive

Despite an extensive communication process for the project, including personally addressed mail outs to 1144 nearby residences, participation was low in public engagement for the JCD Traffic Calming Project. SCOOP proved to be very effective in recruiting participation for the evaluation survey and is proving to be a valuable tool. For residents who did participate in the project engagement, generally, the initial portion of the public engagement was rated favourably, including communication about the events, their purpose and scope, information provided, and moderation of the sessions. The format of one in-

person event combined with an online survey for each phase of engagement appears to have met the needs of the majority of residents.

Residents were less positive about communication of the results of the project and agreement that the input made a difference to the outcomes of the project was divided. Resident belief that public engagement is genuine and meaningful is essential to build resident participation in engagement in Strathcona County. The results of this question suggest that the County needed to do better at showing how resident concerns were understood and reflected in the alternatives developed and the final implemented outcomes of this project.

Generally, from an engineering perspective, this preliminary evaluation of the JCD North and South Traffic Calming Project was largely successful in meeting project goals. While some speed data collected on the roads shows 85th percentile speeds over the speed limit in some locations, roads are generally operating within design capacity and are as expected for the road classifications. Significant speed reductions were achieved at some locations, and most importantly in areas of pedestrian activity.

Transportation Planning and Engineering will continue to monitor speeds, volumes, and collisions periodically in the project area. When full three year post construction collision data is available, a full analysis of the safety impacts of the changes will be completed and evaluated.

From a resident perspective, the success of the project in meeting resident goals on JCD South is marred by concerns about an increase/persistence in aggressive driving behaviour and by lack of driver understanding of how to negotiate roundabouts. Significant increases in resident satisfaction with road noise and safety may be possible with improved driver understanding and behaviour.

Driver understanding of the rules of the road for the use and operation of roundabouts appears to require additional education. Through this engagement and conversations with residents it is apparent that the right of way rules of a roundabout are not always understood by the travelling public. In an effort to provide consistent information to those who are unsure, an explanation that vehicles using a roundabout must yield to all traffic on the left has been used rather than the message to yield to drivers in the circle. It became apparent that some drivers felt the roundabout was intended to operate like an all-way stop and that drivers take turns entering the roundabout. Roundabout designs works well because the primary flow of traffic is generally maintained while the adjoining roads need to yield to only one direction versus all directions.

Stakeholder feedback suggests roundabouts are a preferable design to all-way stop control for Strathcona County Transit, Student Transportation agencies, the RCMP and Enforcement Services and Emergency Services. Where multiple traffic calming features are implemented on a road, there is the potential to significantly impact Emergency Services response time.

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1.0 Background on the Jim Common Drive Traffic Calming Project

In 2016, a traffic calming and management project was initiated for Jim Common Drive (JCD) South and North. This project was initiated in advance of upcoming road rehabilitation based on resident concerns with traffic speed and pedestrian safety which was also substantiated by collected speed data that indicated traffic speeds were in excess of the 50 km/h speed limit.

In 2016, a resident petition, signed by 60 local residents, was also received asking that the intersection of JCD South and Cranford Drive be upgraded to a four way stop from a two way stop. Residents felt that sightlines were restricted and it was difficult to use the intersection as a driver and pedestrian because of the free flow traffic on Jim Common Drive South.

Upon the completion of thorough engineering review and public engagement process, the following traffic calming and management features were installed on JCD South and North during the 2017 scheduled rehabilitation of the roads:

JCD South

- Roundabouts at the intersections with Cranford Drive and Brower Drive.
- A median island and pedestrian flashing beacons at the Crystal Lane intersection.

JCD North

- Curb extensions and pedestrian flashing beacons were added at the trail crossing just north of JCD South.
- Additional curb extensions were added to pedestrian crossings at Clover Bar Ranch Park at the Cimmaron Way and Canyon Drive intersections.

Now that the traffic features have been in place for over a year, Strathcona County is conducting a comprehensive evaluation of the public engagement process and a preliminary evaluation of the traffic impact outcomes of the project.

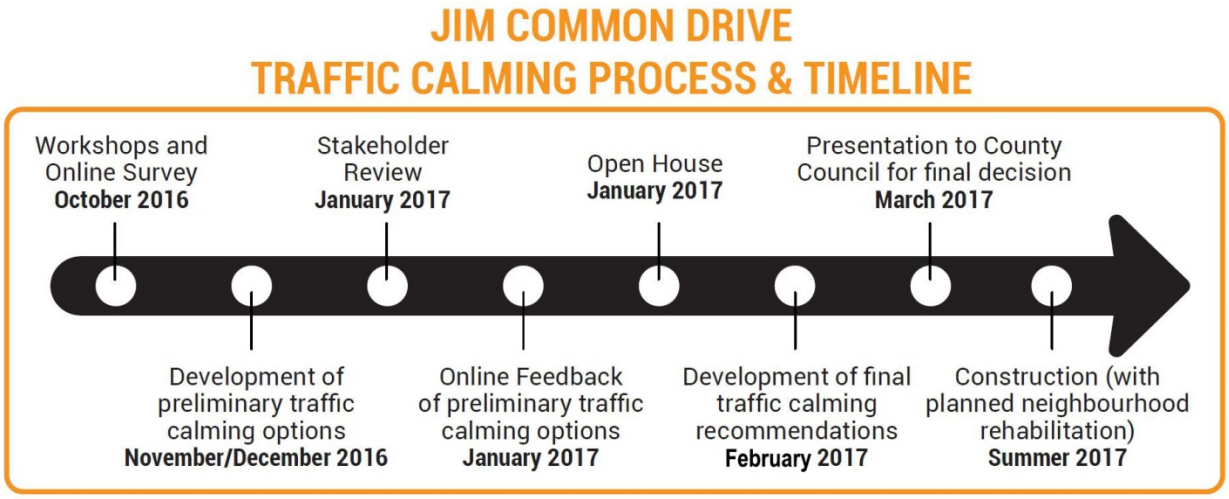
1.1 Public Engagement Process for the Project

Public engagement for this initiative was conducted at the “Listen and Learn” level. According to Strathcona County’s Public Engagement Framework, engagement undertaken at this level will:

> “Provide ways and opportunities to engage the public in ‘conversations’ with assurance that their ideas, concerns, and aspirations will be reflected in the alternatives developed.”

Figure One provides a summary of the process used for this traffic calming initiative.

Figure One: Jim Common Drive Traffic Calming Project Timeline



All residents of Strathcona County were provided with an opportunity to participate in both phases of the public engagement undertaken for this project, although those in the neighbourhoods of Clover Bar Ranch and Charlton Heights, as well as nearby condominium complexes off JCD South were most aggressively recruited. Letters were mailed to all households (1144) as indicated by the circled areas in Figure 2, in advance of both the Workshop/Online Survey in October 2016 and the Open House/Online Survey in January 2017.

Figure Two: Mail out area for JCD Traffic Calming Project

In addition to the resident mail out, engagement opportunities were promoted through the Sherwood Park News, Facebook, and Twitter. They were also promoted through the County's Public Engagement e-newsletter, through the Community Living Advisory Committee, and through the Strathcona County Online Opinion Panel (SCOOP). A project e-newsletter was also set up from the Jim Common Drive Traffic Calming webpage.

1.2 Project Goals and Objectives

Public Engagement

Public engagement for the JCD was undertaken in accordance with the guidelines outlined in Strathcona County's Public Engagement Policy (GOV-002-025). In particular, engagement for this project was completed with the goals of ensuring residents:

- Were aware of the project, its scope, purpose, process and engagement opportunities;
- Were provided with ample opportunities to participate;
- Were provided with the information needed to make an informed decision;
- Were aware of the results of the public engagement;
- Were aware of how their input was reflected in the outcomes of the JCD Traffic Calming Project.

Jim Common Drive South

Based upon public engagement, resident priorities for JCD South were:

- Reduce traffic speeds
- Discourage shortcutting
- Improve pedestrian safety
- Maintain traffic flow
- Improve sightlines at intersections
- Minimize traffic noise

Based upon engineering review, engineering goals for JCD South were:

- Decrease traffic speeds
- Improve sightlines at Cranford Drive
- Decrease pedestrian risk at Crystal Lane(high number of vulnerable road users)
- Improve intersection safety at Brower Drive (due to collision history)

Jim Common Drive North

Based on public engagement, resident priorities for JCD North were:

- Improve pedestrian safety at the trail crossing on the southern end of the road and near the playground.
- Reduce traffic speeds, particularly at the playground
- Manage parking concerns at the playground (parking too close to crosswalks, corners)

Based upon engineering review, engineering goals for JCD North were:

- Decrease traffic speeds near the trail crossing and at the playground (during effective hours)
- Create a single crosswalk at Canyon Drive
- Clarify parking at the playground

2.0 Evaluation Design and Methodology

2.1 Public Engagement

Evaluation of the public engagement was mainly evaluated by the administration of a resident survey. Communication for this survey mirrored the process used for the public engagement activities of the project, with the addition of the use of the Strathcona County Online Opinion Panel (SCOOP) to reach 1198 residents.

Public engagement was also evaluated quantitatively by assessing participation in the engagement activities.

2.2 Project Outcomes

The overall outcomes of the JCD Traffic Calming Project were evaluated using three sources of data.

Resident evaluation

Resident evaluation of the outcomes was collected through an online survey as described section 2.1. Residents were asked their opinions on how well the changes to the roads achieved they goals of the project. Residents were asked a series of rating questions, as well as opportunities to provide open ended responses.

Engineering Evaluation

Engineering evaluation for this project involved the comparison of vehicle speed and volume data collected prior to the traffic calming (October 2015) with similar data collected on the roads in September 2018 and May 2019.

Stakeholder Evaluation

Evaluation of the project also involved the consultation of several internal and external stakeholders:

- RCMP and Enforcement Services
- Emergency Services
- Transit
- Transportation and Agriculture Services (Public Works)
- Transportation Planning and Engineering (Planning, Engineering and Safety)
- Recreation, Parks and Culture (Turf Development, Horticulture/Forestry)
- Elk Island Public and Catholic Schools – Student Transportation

Stakeholders were contacted by email and asked to provide information on any operational impacts caused by the changed road features on JCD North and South.

3.0 Results

3.1 Public Engagement

3.1.1 Quantitative Evaluation of Public Engagement

The mail out area for this project included 1144 households.

For the first phase of public engagement which included a workshop and online survey, 70 households offered input. Over half of the residents who offered input live adjacent to either JCD North or South. Ten of the responses came from residences outside of the mail out area, meaning 60/1144 (5.2%) of residents who are either directly or indirectly impacted and were specifically recruited to participate in the project provided input.

For the second phase of engagement, 129 households provided input. Approximately 96 of the responses came from residents in the mail out area, for a response rate of 8.4% (96/1144) to the letters. Thirty-three participants lived outside the mail out area.

For this evaluation, 499 households participated in an online survey; 197 of these were from residences located inside the study area for a response rate of 17.2% (197/1144). Another 302 responses were received from homes outside of the study area.

Two hundred forty-two responses were received through the online survey link off the project webpage. Another 254 survey responses were received through Strathcona County Online Opinion Panel (SCOOP). 90% of those responding to the survey through SCOOP resided outside of the mail out area.

3.1.2 Resident Evaluation of Public Engagement

Generally, residents rated the initial portion of the public engagement favourably, including communication about the events, their purpose and scope, information provided and moderation of the sessions. Residents were less positive about communication related to the results of the project. Resident agreement that the input made a difference to the outcomes of the project was divided, with 35% agreeing with the statement and 35% disagreeing.

For residents who did not participate in the original 2016 public engagement process, lack of awareness of the project was the most common reason cited (46%).

Full survey results are detailed in the companion document, *Jim Common Drive Traffic Calming Project: Evaluation Survey Results from March 2019.*

3.2 Project Outcomes

3.2.1 Resident Evaluation

Respondents were asked to indicate their level of agreement with several statements based on their personal experience on JCD South and North. Where appropriate, perspectives were broken out based on location (Adjacent, Neighbourhood and Commuter) and user type (Pedestrians and Cyclists). There was large variability in both individual resident ratings and ratings by location of residence of all outcomes.

Jim Common Drive South

Overall, there was tendency towards agreement that road changes on JCD South had resulted in speed reduction, improved intersection visibility, and pedestrian safety while maintaining smooth and efficient traffic flow. There was a fairly strong tendency towards disagreement that road volumes and road noise has been decreased.

The most prominent theme in resident comments about the road changes on JCD South was that many drivers do not know how to use the roundabouts. The majority of positive comments spoke to improvements in the visibility at the roundabouts, particularly when heading North/South. Several other comments cited improved pedestrian safety. Many of the negative comments spoke to the lack of speed reduction on the road between the roundabouts and the prevalence of aggressive driving behaviour.

Jim Common Drive North

Overall, there was fairly strong agreement that the project improved pedestrian safety on JCD North, particularly at the trail crossing. Responses regarding speed reduction and parking management were highly variable.

Although resident comments were also varied, generally, respondents tended to be quite positive about the features installed at the trail crossing and more negative about the choices at Clover Bar Ranch Park. Many residents expressed concern that the road is now too narrow and decreases safety for drivers, particularly in winter. Several residents indicated speeding on JCD North remains a major concern.

Full survey results are available in the companion document, *Jim Common Drive Traffic Calming Project: Evaluation Survey Results.*

3.2.2 Engineering Evaluation

Jim Common Drive South

Speed and volume data were collected at three locations on JCD South as indicated on the map in Figure Three. Note that the highlighted numbers represent less than 24 hours due to hardware issues and are not complete daily traffic volumes.

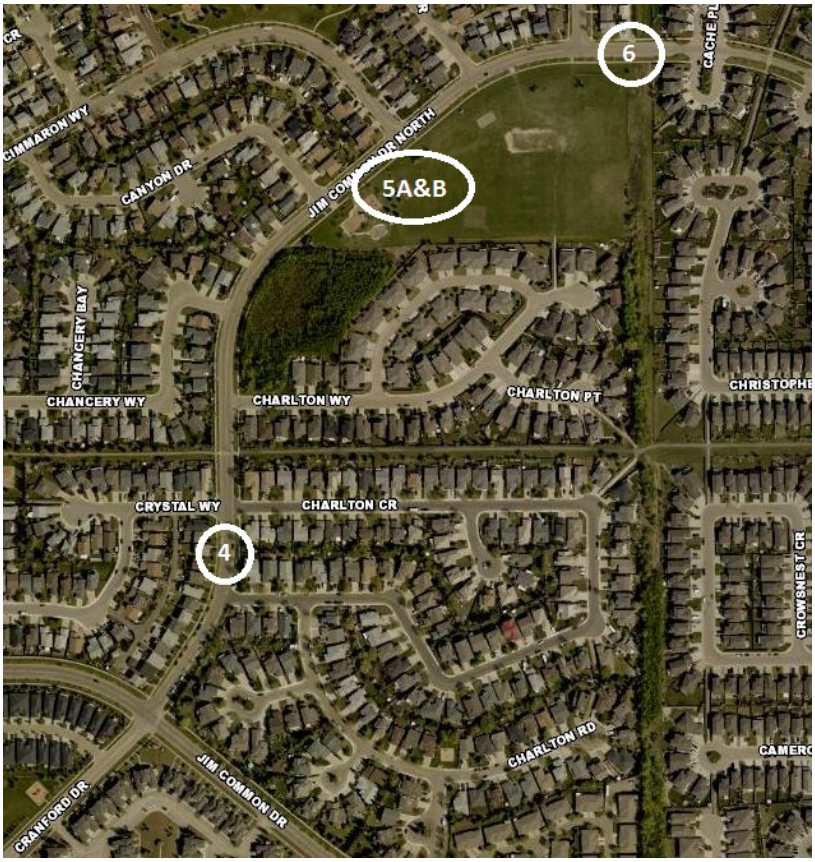
Figure Three: Traffic Data Collection Locations – JCD South

Location 1	**Oct-15**		**Sep-18**		**May-19**	
JCD (south) East of Crystal Lane	Speed (85th %ile km/h)	Volume (veh/day)	Speed (85th %ile km/h)	Volume (veh/day)	Speed (85th %ile km/h)	Volume (veh/day)
Eastbound	no data	no data	54.7	2993	58.4	3081
Westbound	no data	no data	59.1	2812	57.2	2692
Location 2	**Oct-15**		**Sep-18**		**May-19**	
JCD (south) Between Cranford and Brower Drive	Speed (85th %ile km/h)	Volume (veh/day)	Speed (85th %ile km/h)	Volume (veh/day)	Speed (85th %ile km/h)	Volume (veh/day)
Eastbound	64.3	2631	54.8	2301	55.7	2320
Westbound	67.8	1834	56.1	1955	56.3	1898
Location 3	**Sep-14**		**Sep-18**		**May-19**	
JCD (south) East of Brower Drive	Speed (85th %ile km/h)	Volume (veh/day)	Speed (85th %ile km/h)	Volume (veh/day)	Speed (85th %ile km/h)	Volume (veh/day)
Eastbound	51.4	2098	54.6	834	53.7	1906
Westbound	43.1	1656	58.4	1602	59.6	1542

Jim Common Drive North

Speed and volume data were collected at four locations on JCD North as indicated on the map in Figure Four. Note that the highlighted numbers represent less than 24 hours due to hardware issues and are not complete daily traffic volumes.

Figure Four: Traffic Data Collection Locations- JCD North



Location 4	Sep-16		Oct-18		May-19	
JCD (north) south of Crystal Way	Speed (85th %ile km/h)	Volume (veh/day)	Speed (85th %ile km/h)	Volume (veh/day)	Speed (85th %ile km/h)	Volume (veh/day)
Northbound	59.1	1196	49.2	1355	53.9	1344
Southbound	52.1	1291	46.6	1441	51.6	1429
Location 5A	**Sep-16**		**Oct-18**		**May-19**	
JCD (north) East of Canyon Drive (50 km/h speed limit)	Speed (85th %ile km/h)	Volume (veh/day)	Speed (85th %ile km/h)	Volume (veh/day)	Speed (85th %ile km/h)	Volume (veh/day)
Eastbound	52.0	184	48.5	145	50.3	131
Westbound	52.8	260	47.2	171	48.1	224

Location 5B	Sep-16		Oct-18		May-19	
JCD (north) East of Canyon Drive (30 km/h speed limit)	Speed (85th %ile km/h)	Volume (veh/day)	Speed (85th %ile km/h)	Volume (veh/day)	Speed (85th %ile km/h)	Volume (veh/day)
Eastbound	44.6	784	38.7	596	42.7	833
Westbound	51.4	546	36.3	539	41.5	700
Location 6	**Sep-16**		**Oct-18**		**May-19**	
JCD (north) East of Cactus Way	Speed (85th %ile km/h)	Volume (veh/day)	Speed (85th %ile km/h)	Volume (veh/day)	Speed (85th %ile km/h)	Volume (veh/day)
Eastbound	53.7	777	54.4	793	53.3	840
Westbound	55.6	681	53.0	698	52.0	762

Collision Analysis

Collisions were not considered at this time as the acceptable and appropriate review of collision data requires a minimum of three years of data to be relevant and the focus of this evaluation was primarily for public perception and operational assessment. A cursory review of collisions showed two unusual collisions related to police incidents that were unrelated to the changes made in the road, all other collisions were within expected and acceptable parameters and did not suggest any issues for concern.

3.2.3 Stakeholder Evaluation

Strathcona County Transit

Feedback from transit supervisors/operators:

"The best thing about the new calming circles on Jim Common Drive is how big they are. Operators find these circles the best to navigate in Sherwood Park. They wish that all the circles could be made like these two.

These ones are much better on their arms, especially when they have to navigate the circles as often as they do. They find they don't have the crank the steering wheel so hard and so fast. Arm/shoulder injuries are always a concern. Due to less arm fatigue, they are also less inclined to drive over the skirt. That isn't necessary with the new circles."

"The circles slow the timing of the run but not enough to cause major impacts. I would say that the circles would be quicker than having to come to a full stop if they installed stop signs. They are also better than the raised tables on Glenbrook Blvd."

Elk Island Public and Catholic Schools Student Transportation

Neither the Public nor Catholic Student Transportation report any operational impacts as a result of the traffic calming implemented on JCD North and South. They have had no complaints or concerns from their operators.

RCMP and Enforcement Services

From the enforcement database, only three traffic safety complaints have been received since the JCD South calming. All three came from cyclists who had close calls. One of the incidents escalated to a war

of words where the cyclist had priority but was clearly cut off. One noise complaint was received from the Eastern traffic circle at JCD South, which was deemed unfounded.

Enforcement Services also report that they appreciate the roundabouts are self-enforcing, as opposed to stop signs, which require regular monitoring to ensure compliance.

The RCMP report they have had no traffic complaints on Jim Common at all this year. There is no indication that the traffic calming on JCD North or South has impacted response times.

Public Works

Public works had no concerns with the design and operation of the all traffic features constructed during the JCD project.

Asset Management

No issues or concerns have been raised at this time, however additional review and assessment is ongoing.

Recreation, Parks and Culture (RPC)

RPC's Turf Development branch maintains areas similar to the artificial turf traffic circles, such as medians with brick work. As of yet they have not performed maintenance work on the traffic circles. Industry experience suggests that soil and seeds will collect in the turf and germinate over time, but this has not taken place yet. As this is the first time Turf Development has had to maintain artificial turf in a roadway setting they are taking a bit of a wait and see approach.

Forestry and Horticulture maintain plantings on medians and roundabouts, and frequently deal with plant material causing sightline issues for motorists. This branch indicates they appreciate the use of the artificial turf to eliminate future vegetation concerns at these locations.

Transportation Planning and Engineering (TPE)

Since the construction of the roundabout, TPE has two households who have expressed ongoing concerns. One concern relates to ongoing speeding on JCD South. The other relates to intersection visibility of the roundabouts due to the absence of plantings and missing signage.

Emergency Services (ES)

Pre and post installation trials were not conducted by ES, so they cannot specifically indicate how much the traffic calming features have increased response times. Generally, ES reports intersections with roundabouts are faster to clear than those with stop signs but slower at intersections where there would have previously been no requirement to stop or slow. ES indicates the roundabouts on JCD provide less impedance than others in Sherwood Park and suggest that where stop signs are warranted due to traffic volume a roundabout is a better alternative.

With regards to the curb extensions, ES reports in areas or times of high traffic they can cause delays as they decrease civilian vehicles ability to get out of the way and can cause a backup of vehicles from both directions. Exactly how much the delay is depends on how many have to be crossed enroute to an emergency and how heavy the traffic is at that time of the day.

4.0 Discussion of Results

4.1 Public Engagement

Quantitative Analysis

Despite personally addressed mail outs to every home in the neighbourhoods of Clover Bar Ranch and Charlton Heights, as well as nearby condominium complexes off JCD South (see Figure Two), local resident participation in the public engagement for this project was quite low (5.2% and 8.4% in the first and second phase respectively). Although low, participation numbers are similar to other traffic calming projects previously undertaken in Strathcona County (Glen Allan, Davidson Creek/Clarkdale Meadows).

Participation in the evaluation survey was significantly higher than participation in the public engagement undertaken for the Jim Common Drive Traffic Calming Project, growing from 129 to 499. In particular, the number of residents who participated from outside the mail out area increased almost 10 fold, from 33 in the second phase of the project to 302 in this evaluation. The number of residents from the mail out area who participated in the evaluation survey doubled from the number that participated in the second phase of the project engagement, growing from 96 to 197 (17.2%).

A large proportion of this increase in participation can be attributed to Strathcona County's new Online Opinion Panel (SCOOP), which added a reach of 1198 residents (some of which overlapped with the mail out area) to the communications for this project. 254 residents responded to the survey through SCOOP, accounting for 85% of the increase in the number of responses that came from outside the mail out area and 25% of the increase in the number of the responses in the mail out area.

The rest of the increase in participation in the evaluation survey is likely attributable to a generally increased number of residents who became aware of the project through construction. In addition, many residents may have been more motivated to participate if they feel strongly positive or negative about the changes made to the road.

Resident Analysis

Overall, 110/499 respondents (22%) reported that they participated in public engagement related to the Jim Common Drive Traffic Calming Project. Since only 70 and 129 residences participated in the first and second phase of this project, and many of these were likely the same residents, this represents a high percentage of the residents who participated in the engagement for the JCD Traffic Calming Project in 2016 and 2017.

For residents who did not participate in the engagement process, lack of awareness of the engagement was the most common reason cited for non-participation. Even for residents who received mail outs, 42% reported they were not aware of the opportunities for input. The next most common reason for non-participation for residents in the mail out area was No Time (18%). 17% indicated they did not participate because they felt input would not be used or valued, suggesting the County needs to continue to build trust with residents.

For respondents living outside the mail out area, 47% indicated they were not aware of opportunities. Not surprisingly, 22% simply were not interested, and 19% chose "Other" and many of these residents

commented that the project did not affect them. Only 9% of residents outside the mail out area indicated they did not participate because they did not feel their input would be used or valued.

Awareness of the project, its scope, purpose and process

Given that half of those who did not participate in the public engagement for the project indicated that they were not aware of opportunities, Strathcona County needs to continue to improve how we communicate engagement opportunities to residents. Results of this evaluation clearly show how SCOOP is already helping the County to communicate better, but there is still room for improvement.

For residents who did participate in the engagement, there was a strong tendency towards agreement (75% +) that ways to get involved were well communicated, and they understood the scope, purpose and process of the project.

Opportunities to participate

The format of one in-person event and an online survey for each phase of engagement used in this project seems to meet the needs of the majority of residents. Only 14% of those who participated disagreed that a reasonable variety of options to share input were available, and 1% strongly disagreed.

For residents who did not participate, only 3% of those in the mail out area and 1% of the entire sample indicated that they did not participate because “opportunities did not meet my needs”.

Information provided during engagement

The majority of residents also agreed that they were provided with the information they needed to participate in an informed manner, and that they were informed about the County’s next steps.

Awareness of the results of the public engagement; and
Belief that the input provided by residents made a difference to the project outcomes

Only 52% of residents agreed that the County provided information on what was heard through the engagement process, with 18% of residents disagreeing. This lack of awareness likely contributed to resident responses to the statement: “the input provided by residents made a difference to the outcomes” of the project. Residents were divided on this statement, with 35% agreeing and 35% disagreeing.

Resident belief that public engagement is genuine and meaningful is essential to build resident participation in engagement in Strathcona County. The results of this question suggest that the County needed to do better at showing how resident concerns were understood and reflected in the alternatives developed and the final outcomes of this project.

4.2 Project Outcomes

4.2.1 Jim Common Drive South

Speed

Resident opinions of the effectiveness of the outcomes in reducing traffic speeds on JCD South were very mixed. Residents who reside adjacent to the road were particularly polarized in their opinions with 45% agreeing that speeds have decreased and 45% disagreeing. Overall, there was a tendency towards agreement that the project was successful in decreasing traffic speeds on JCD South.

Engineering assessment suggests that speeds on JCD South have decreased considerably midblock between Cranford Drive and Brower Drive. Although 85th percentile speeds remain 6-7 km/h above the speed limit in data collected in 2018 and 2019, speeds were shown to have dropped approximately 10 km/h from those recorded in 2015 before the installation of the road features.

85th percentile speeds measured in 2018 and 2019 west of Cranford Drive and east of Brower Drive ranged from 55.1-58.9 km/h. Speeds east of Brower Drive have increased from data collected in 2014. This is an area currently undergoing development and traffic pattern changes are expected to continue to occur as development continues.

Speed measurements persisting around the 50 km/h speed limit reflect the design and character of the road. JCD South is a major collector, designed with minimal accesses and no driveways to facilitate access and egress from adjacent neighbourhoods and businesses. Achieving greater speed reductions will be difficult on JCD South, without significant road design changes or regular police enforcement (unwarranted by collision history or risk profile).

Shortcutting

Survey results suggest the majority of residents have not experienced a reduction in traffic volumes on JCD South. Resident opinion is backed up by traffic data collected on the road. Traffic volumes have remained similar through data collection over time. Although decreasing traffic volumes, secondary to a perceived shortcutting issue on the road, was a resident priority in the JCD Traffic Calming Project, it was not an engineering goal, and features were not specifically designed to discourage road use. From an engineering perspective, the traffic data does not suggest that shortcutting is problematic and the road is operating accordingly for the indented design.

JCD South is a major collector road and is designed to manage 6000-8000 vehicles per day. Traffic volumes on the road fall well below this threshold east of Brower Drive and between Brower and Cranford Drives. Closest to Sherwood Drive, volumes are approaching 5800 vehicles, but remain within expected volumes and well below design capacity.

Traffic flow

Maintaining traffic flow on JCD South was a high priority for many residents, as it is the primary route in and out of their neighbourhood. In the evaluation survey, the majority of respondents who expressed an opinion, regardless of place of residence, tended to agree with the statement, “Traffic flow is smooth and efficient”. Commuters were the most likely to disagree with this statement.

Several resident comments suggest traffic flow is improved across JCD South, particularly at Cranford Drive. No resident comments reported any increased congestion on the road. No changes have been noted in road congestion or in traffic queues at Sherwood Drive based on engineering observations.

Stakeholder input from Strathcona County Transit, Student Transportation agencies, the RCMP and Enforcement Services and Emergency Services report that, although there is some increase in the amount of time required to travel on JCD South, delay with the addition of the roundabouts is minor and has not had a significant operational impact. This also suggests acceptable traffic flow has been maintained along the road. These same stakeholders all indicated operational impacts and delay were

less with the roundabout option than they would be, had all-way stop control been implemented at these intersections.

Driver understanding of the rules of the road for the use and operation of roundabouts appears to require additional education. Through this engagement and conversations with residents it is apparent that the right of way rules of a roundabout are not always understood by the travelling public. In an effort to provide consistent information to those who are unsure, an explanation that vehicles using a roundabout must yield to all traffic on the left has been used rather than the message to yield to drivers in the circle. It became apparent that some drivers felt the roundabout was intended to operate like an all-way stop and that drivers take turns entering the roundabout. Roundabout designs works well because the primary flow of traffic is generally maintained while the adjoining roads need to yield to only one direction versus all directions.

Pedestrian Safety

Pedestrian safety was one of the major concerns identified by residents during the first phase of engagement for the JCD Traffic Calming Project. In particular, many people noted the high number of vulnerable road users (children, special needs and seniors) crossing at Crystal Lane to access Transit or the Circle K store.

The majority of residents agreed that pedestrian safety on JCD was improved, with less than 20% disagreeing with the statement, “Road changes have improved pedestrian safety”. When the opinions of those who reported that they regularly walk and/or cycle on the road were broken out for analysis 12% of cyclists and 32% of pedestrians disagreed. Pedestrians also had the highest rate of respondents who strongly agreed with this statement, suggesting there is a wide variety of pedestrian experience on the road, which may be a function of where/when pedestrians are crossing.

From an engineering perspective, pedestrian risk on the road has been significantly reduced. Research has found roundabouts are one of the safest designs available for pedestrian safety, as they force lower speeds at the crosswalks near the roundabouts. At midblock points on the road where some higher speeds may persist, there is no reason for any pedestrian activity as fencing limits access points. Both the median island and pedestrian beacons added at Crystal Lane are also proven interventions to improve safety.

The ultimate measure of improved pedestrian safety will be collision statistics. The features have not been in place long enough to determine their efficacy through collision analysis, as at least three years of data will be necessary to form a complete analysis.

Intersection Visibility

One of the biggest concerns for residents who live in the condos south of JCD South was visibility when accessing JCD South off of Cranford Drive. This was the principal concern behind the demand from these residents to implement all-way stop control at this intersection. Agreement was strongest amongst Neighbourhood and Adjacent respondents with the statement, “Road changes have made it easier for me to see to navigate the intersections”.

Commuters were slightly more likely to disagree with this statement. This is not surprising considering that drivers travelling along JCD South previously had no intersections and had the right of way along the whole segment.

From an engineering perspective, the addition of the roundabouts is expected to improve intersection safety. Roundabouts require drivers to approach the intersection at a slower speed, reducing the sightline distance needed for safety. In addition, drivers are only required to watch for the vehicle on their left, rather than to yield to drivers coming from both directions, as was the case previously as a two-way stop control. The ultimate measure of safety improvements will be collision statistics, which Strathcona County will continue to monitor.

Road Noise

Road noise on JCD South was a common concerned voiced by residents living adjacent to JCD South during project engagement. Of the respondents who provided an opinion on road noise, there was a strong tendency towards disagreement that road noise had been reduced on JCD South. Not surprisingly, residents living adjacent to the road were the most likely to disagree with the statement, "Road changes have decreased road noise". Interestingly, adjacent residents were also the most likely to strongly agree with the statement.

From an engineering perspective, roundabouts produce far less noise when compared to two all-way stops. Similarly, some residents felt speed humps should have been installed on JCD, while known to reduce operating speeds; speed humps are known to contribute to additional road noise.

Several resident comments report drivers honking, loudly accelerating and decelerating. The most common comment provided by residents is that drivers do not know how to use the roundabouts. As a whole comments speak loudly of a high level of frustration on the road. It seems likely that the reported road noise is produced secondary to driver conflicts and could be reduced through better driver understanding on the use roundabouts.

Overall Safety

Overall, there was a tendency towards agreement that the project was successful in improving safety on JCD South. Responses varied, however, and were most polarized amongst adjacent residents and pedestrians.

Despite the significant speed reduction noted between Cranford Drive and Brower Drive, there are still a few residents living adjacent to the road who would like additional measures taken to decrease traffic speed and volumes on the road.

Many residents speak to the prevalence of aggressive driving behaviour on the road. It is clear from resident comments that many people do not understand right of way operations at roundabouts. This is likely increasing the actual level of aggressive driving as well as the perceived level, as many may be interpreting proper use of the roundabouts as driving aggressively.

Two high speed collisions have taken place on JCD South at the roundabouts since their construction, both involving impaired drivers, one of whom was running from police. For some residents, this has led

them to believe the road is less safe since construction. Unfortunately, this type of incident does occur in our community each year, and no road design can eliminate the risk created by these drivers.

Ultimately, collision statistics will be used to assess the actual safety benefits of the road changes. Thankfully, the number of collisions experienced on the road is relatively low, so at least three years of collision data will be needed before a valid safety assessment can be made.

4.2.2 Jim Common Drive North

Speed

Residents were divided on whether or not they agreed that road changes have decreased speeds on Jim Common Drive North. Slightly more Commuters agreed that speeds have been reduced. However, adjacent residents, Pedestrians and Cyclists were more likely to disagree.

From an engineering perspective, traffic speeds have not changed significantly with the road features constructed on Jim Common Drive North. This is not surprising since research suggests the addition of curb extensions results in only modest speed reductions, as generally seen in the data collection. More aggressive features, including speed humps were presented to residents as an option at the playground during the engagement process; however their installation was not supported by the residents.

For the most part, speed data collected on JCD North showed roads were operating as expected prior to and after traffic calming. Significant speed reductions are seen in the only two areas of engineering concern prior to the traffic calming: south of Crystal Way (northbound) and westbound at the playground (during effective hours).

Compliance with the playground speed limit had improved significantly when data collection was done in 2018. Some of the calming impacts were reduced with 2019 data collection, perhaps due to drivers becoming more comfortable with navigating the revised road structure.

Pedestrian Safety

The majority of all respondents who expressed an opinion, regardless of place of residence, tended to agree that pedestrian safety was improved on JCD North at Clover Bar Ranch Park, including pedestrians and cyclists. However, pedestrians and cyclists had higher rates of disagreement with the statement than other groups.

Comments reveal that the majority of residents feel that pedestrian safety is significantly better at the trail crossing, but less improved at the playground. Many residents expressed dislike for curb extensions in general, citing concerns about their visibility and the ability of two large vehicle to pass through at the same time. Despite concerns that the curb extensions are being hit by drivers, only one comment actually indicated the driver had hit a curb extension.

From an engineering perspective, data suggests that pedestrian risk is significantly decreased at both the trail crossing and the playground. Speed reductions are highest at these crossing points, which is one of the strongest indicators of pedestrian safety. Further, research suggests curb extensions and pedestrian beacons are both proven interventions to improve safety. Ultimately, collision statistics will be used to assess the actual safety benefits of the road changes.

Parking at Clover Bar Ranch Park

Generally, there was no consensus on how residents feel about how the road changes have affected parking at Clover Bar Ranch Park. Few survey respondents indicated that they Strongly Agreed or Strongly Disagreed. Many chose a Neutral or Don't Know response, suggesting that residents are generally not seeing a significant change in parking management at the park.

From an engineering perspective, parking has been clarified at the crosswalks where the curb extensions were installed. It is no longer possible for drivers to reduce driver and pedestrian sightlines by encroaching on the marked crosswalks. Undoubtedly, parking volumes will remain high in times of high park usage and the changes have improved crosswalk visibility and safety.

5.0 Conclusion

5.1 Public Engagement

Despite an extensive communication process for the project, including personally addressed mail outs to 1144 nearby residences, participation was low in public engagement for the JCD Traffic Calming Project. SCOOP proved to be very effective in recruiting participation for the evaluation survey and is proving to be a valuable tool.

For residents who did participate in the project engagement, generally, the initial portion of the public engagement was rated favourably, including communication about the events, their purpose and scope, information provided, and moderation of the sessions. The format of one in-person event combined with an online survey for each phase of engagement appears to have met the needs of the majority of residents.

Residents were less positive about communication of the results of the project and agreement that their input made a difference to the outcomes of the project was divided. Resident belief that public engagement is genuine and meaningful is essential to build resident participation in engagement in Strathcona County. The results of this question suggest that the County needed to do better at showing how resident concerns were understood and reflected in the alternatives developed and the final implemented outcomes of this project.

5.2 Project Outcomes

Generally, from an engineering perspective, this preliminary evaluation of the JCD North and South Traffic Calming Project was largely successful in meeting project goals. While some speed data collected on the roads shows 85th percentile speeds over the speed limit in some locations, roads are generally operating within design capacity and are as expected for the road classifications. Significant speed reductions were achieved at some locations, and most importantly in areas of pedestrian activity.

Transportation Planning and Engineering will continue to monitor speeds, volumes, and collisions periodically in the project area. When full three year post construction collision data is available, a full analysis of the safety impacts of the changes will be completed and evaluated.

From a resident perspective, the success of the project in meeting resident goals on JCD South is marred by concerns about an increase/persistence in aggressive driving behaviour and by lack of driver

understanding of how to negotiate roundabouts. Significant increases in resident satisfaction with road noise and safety may be possible with improved driver understanding and behaviour.

On JCD North, resident evaluation indicates fairly strong agreement that the project improved pedestrian safety, particularly at the trail crossing. Responses regarding speed reduction and parking management were highly variable. Residents did not support more aggressive traffic calming measures at the playground to manage speeds during playground effective hours. Should concerns persist, the installation of permanent driver feedback signs could be considered.

Stakeholder feedback suggests roundabouts are a preferable design to all-way stop control for Strathcona County Transit, Student Transportation agencies, the RCMP and Enforcement Services and Emergency Services. Where multiple traffic calming features are implemented on a road, there is the potential to significantly impact Emergency Services response time.

Driver understanding of the rules of the road for the use and operation of roundabouts appears to require additional education. Through this engagement and conversations with residents it is apparent that the right of way rules of a roundabout are not always understood by the travelling public. In an effort to provide consistent information to those who are unsure, an explanation that vehicles using a roundabout must yield to all traffic on the left has been used rather than the message to yield to drivers in the circle. It became apparent that drivers felt the roundabout was intended to operate like an all-way stop and that drivers take turns entering the roundabout. Roundabout designs works well because the primary flow of traffic is generally maintained while the adjoining roads need to yield to only one direction versus all directions.

6.0 Learnings and Evaluation Outcomes

- Participation in public engagement for traffic calming projects could be further improved
    - SCOOP is an effective tool to improve resident awareness of upcoming opportunities to provide input, but Strathcona County must also seek other innovative ways to improve involvement.
    - Resident belief that public engagement is genuine and meaningful is essential to build resident participation in engagement in Strathcona County. Strathcona County needs to better communicate how resident concerns are understood and reflected in projects.
- Residents do not understand how to use small, residential roundabouts
    - A comprehensive and innovative education campaign is needed to improve driver understanding.
- Strathcona County will continue to monitor speeds and collision data as an ongoing evaluation of the project outcomes.
- Roundabouts are a preferable design to all-way stop control for many internal and external stakeholders.
- Ensure traffic calming features are negotiable by Emergency Services vehicles where multiple features are proposed.