



MEMORANDUM

TO: MAYOR AND COUNCIL **DATE:** NOVEMBER 3, 2025

FROM: ENGINEERING DIVISION **FILE NO:** 8330-20-002

SUBJECT: REDUCING BARRIERS TO URBAN TRAIL USERS – BAFFLE GATES

The purpose of this memorandum is to provide Mayor and Council with an update on the use of baffle gates on trails, walkways, and Multi-Use Paths (MUP), which can be a potential barrier to some users. The local cycling community have raised concerns with the difficulty in navigating around baffle gates (or maze gates) installed in the Township. Some residents have also reported difficulty maneuvering their mobility scooters or wheelchairs through baffle gates. At the April 28, 2025, Regular Afternoon Meeting, Council passed the following resolutions:

That Council be updated by staff on work being undertaken to identify potential changes to the Subdivision and Development Servicing Bylaw that may eliminate the use of bicycle stop baffles on the Township of Langley's Urban Trail network in favour of other, more accessible trail barriers, and

That staff include in the update to Council a list of locations of current bicycle stop baffles in areas of key importance to the Township's urban cycling network, and that this list include potential costs associated with the replacement of the bicycle stop baffles with more accessible trail barriers.

The Township's Subdivision and Development Servicing Bylaw 2019 No. 5382 (Subdivision Bylaw), includes two types of baffle gates. A Bicycle Stop Baffle is a minimum three-meter-wide single baffle placed at the end of a trail to prevent cyclists from inadvertently entering the roadway. The Bylaw includes a supplementary detail drawing TLP 29 for this installation. As illustrated in Attachment A, the Bicycle Stop Baffle does not impede cyclists from accessing the cycling network and only prevents them from inadvertently entering the roadway.

The Subdivision Bylaw also includes supplementary detail drawing TLR 21 for a Fixed Baffle Barrier, also known as baffle gates or maze gates. As illustrated in Attachment A, it typically consists of two baffles with 1.5-meter spacing in between. The purpose of this type of baffle gate is to slow cyclists/pedestrians at key locations, thereby reducing the risk of motor-vehicle/cyclist, cyclist/cyclist or cyclist/pedestrian collisions. The baffle gates also reduce cycling traffic to one direction at a time. The Township has numerous locations where baffle gates are present and are often located at the entrances to urban MUP where underground utilities (storm, sanitary, water) are present and where there is a need to maintain access for Township crews and equipment, while also restricting public vehicular access.

Practices in the Lower Mainland

Staff completed a review of the engineering design standards from other Lower Mainland municipalities, as summarized below:

- 11 municipalities indicate their use of baffle gates
- 6 municipalities do not include baffle gates in their design standards, although baffle gates may still exist in those municipalities despite not being part of the most updated engineering design standards.

Staff reached out to local municipalities regarding their current practice with baffle gates. Nine municipalities confirmed they are either in the process of removing baffle gates upon residents' requests or have completed the removal of most baffle gates. One municipality indicated that they have no baffle gates, and one municipality indicated they only have one baffle gate. Two municipalities note in their engineering design standards that baffle gates are used only where the MUP grade exceeds eight percent.

The typical engineering treatment employed by other municipalities to address similar concerns includes the following:

- removing one baffle with the other baffle remaining as is
- removing both baffles and installing one bollard in the middle of the MUP
- increasing the spacing between the two baffles.

BC Ministry of Transportation and Transit Guidelines

The 2019 British Columbia Active Transportation Design Guide (BCATDG), published by the Ministry of Transportation and Transit (MOTT), recommends that the use of rigid bollards or baffle gates at MUP points of entry should be avoided unless there is a demonstrated history of motor vehicle encroachment, and/or a collision history.

The use of baffle gates for cycling speed control is not recommended as it poses a potential safety risk to the cyclists and other active transportation users. Instead, speed control of cyclists and other users is recommended to be achieved through geometric design. Where physical barriers are required, flexible bollards are preferred instead of baffle gates. Flexible bollards noted in the BCATDG are wider than typical flexible delineator posts.

Purpose of Baffle Gates

While baffle gates are a concern for the cycling community and some residents, they were originally installed to address important safety considerations, including:

- clearly identifying where MUP intersect with roads or other MUP
- to reduce the travel speed of users before entering areas with potential conflicts with other trail users
- to reduce operating speeds on steep grades
- to improve safety approaching rail crossings or where MUP exit onto roads
- to provide an additional safety measure where there is a history of motor vehicle encroachment
- to address concerns with operating speeds of persons using electric assist devices, such as e-kick scooters and e-bikes.

Baffle gates are recommended to remain where there is a steep hill, sightlines are limited, pedestrian activity is high, MUP's exit onto roads, railway crossings are present, or there is a history of consistent motor vehicle encroachment.

Upcoming Subdivision Bylaw Update

Based on typical practices within the Lower Mainland, it is desirable to limit new baffle gate installations, and an update of the Subdivision Bylaw has been initiated and is anticipated to be completed in 2026. The supplementary detail drawing for baffle gates (TLR 21) is being replaced with the detail for a single bollard (TLR 22) except for locations on steep hills or at railway crossings, or where recommended due to other concerns. The TLR 22 standard detail drawing is presented in Attachment B.

Existing Baffle Gate Use

Staff undertook an extensive review of existing baffle gates in the entire Township through desktop reviews supplemented by site inspections. The review is based on the best available geographic information systems (GIS) data. Staff also undertook a cross-check of the baffle gates list provided by HUB Cycling. However, some baffle gates may not have been captured due to data limitations.

The review identified 447 baffle gate locations as illustrated in Attachment C. Of these locations, approximately 85 are at the top or bottom of steep hills, and 8 are at railway crossings and should remain in place based on a preliminary review. Due to the scale of the maps, some baffle gates may overlap with others.

Options and Costs to Retrofit Existing Baffle Gates

There are several options the Township could consider for retrofitting the existing baffle gate locations identified, including:

Option 1 – Remove One of the Two Baffles

- removal of the baffle and the anchor points embedded in the pavement, and restoration of the concrete/asphalt to remove any potential tripping hazards within the MUP
- provides a straight 1.5-metre-wide route that is sufficient for bicycles with trailers, scooters, wheelchairs and other mobility devices
- the MUP remains as one-way travel past the remaining baffle gate
- estimated cost per location is \$2,000.

Option 2 – Remove Both Baffles and Replace with a Single Bollard

- removal of both baffles and the anchor points embedded in the concrete/asphalt
- restoration of the concrete/asphalt and the installation of a bollard
- provide a straight 1.4-metre-wide route on both sides of the bollard
- allows for two-way travel around the bollards for trail users
- estimated cost per location is \$5,500.

Option 3 – Retain Baffle Gates with Increased Spacing

- increased spacing between baffles by relocating one baffle and the anchor points further away from the other baffle
- provides an improved one-way path through the baffles
- continues to provide the safety benefit on steep hills and at rail crossings
- estimated cost per location is \$5,500.

The following table estimates the potential costs of retrofitting existing baffle gate locations for each of the three options.

Option	Optional Gates (362)	Required Gates (85)	Total Estimated Cost
1	\$724,000	\$467,500	\$1,191,500
2	\$1,991,000	\$467,500	\$2,458,500
3	\$1,991,000	\$467,500	\$2,458,500

Given the safety considerations outlined earlier, only Option 3 is suitable for the 85 required gates, as it maintains the gates while providing increased spacing.

The cost estimates presented are high-level costs and would be refined once several retrofits have occurred and actual costs have been tracked. As the site conditions for these locations vary, with some located on asphalt and others on concrete, the amount of restoration work will vary by location, and the costs presented are an estimated average cost per location. Costs will also vary depending on how close each location is to one another and how many locations can be completed in a single day.

If Council wishes to explore retrofitting existing gates, staff recommends a \$100,000 pilot project to retrofit up to 20 baffle locations, prioritized based on proximity to schools, parks, and recreation facilities, with input from cycling advocates. The pilot would confirm actual retrofitting costs, after which staff would refine estimates and report back to Council with recommendations.

- ATTACHMENT A Bike Baffle Examples
- ATTACHMENT B TLR 22 Standard Detail
- ATTACHMENT C Baffle Gate Maps

ATTACHMENT A

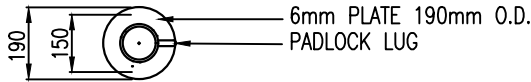


A Bicycle Stop Baffle (TLP 29) at the end of a trail

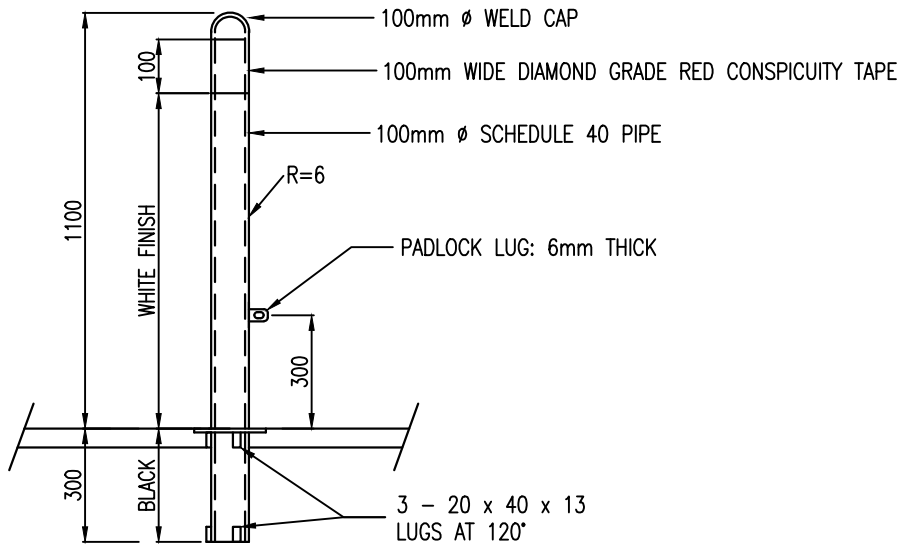


A Fixed Baffle Barrier/Maze Gate (TLR 21) at the entry point of a trail

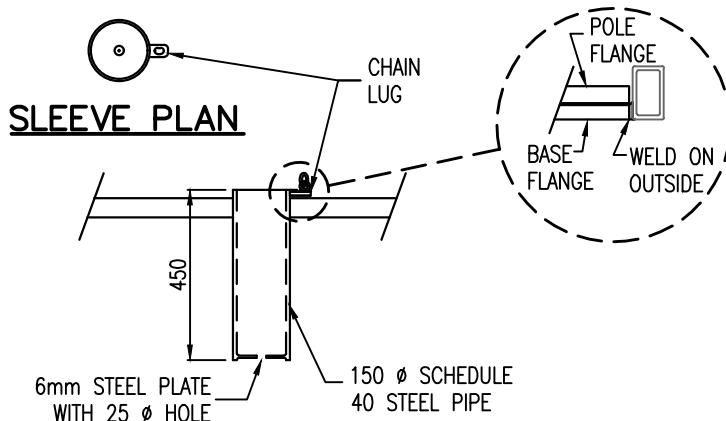
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02/12/24



POST PLAN



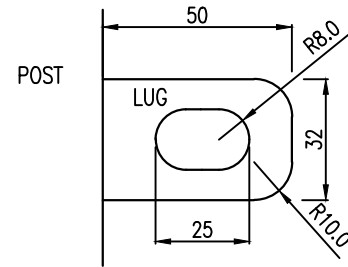
POST ELEVATION



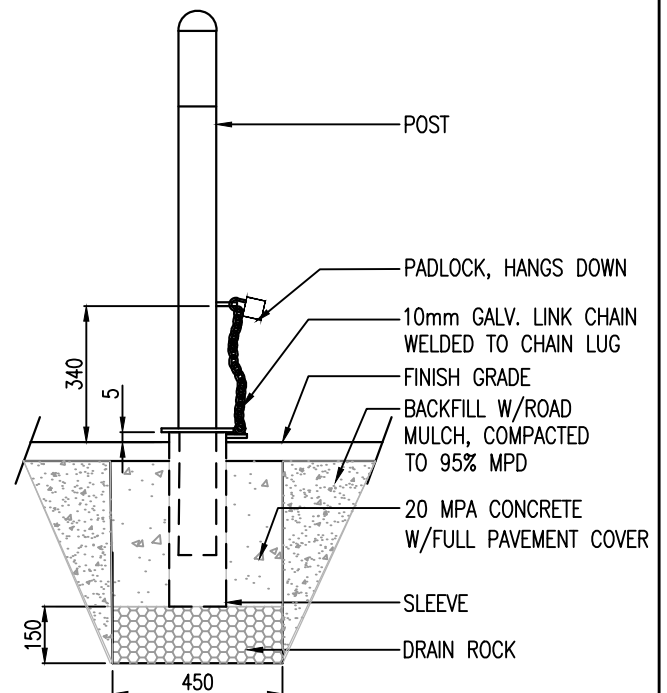
SLEEVE ELEVATION

NOTES:

- 1) ALL PIPE TO BE ASTM A53 SEAMLESS PIPE
- 2) EXPOSED PARTS TO BE PRIMED
- 3) EXPOSED PARTS TO BE PAINTED WITH TWO COATS OF HIGH GLOSS ENAMEL PAINT
- 4) ALL UNPAINTED COMPONENTS TO BE HOT DIPPED GALV. AFTER FABRICATION
- 5) CONTRACTOR SUPPLIED PADLOCK: SM52 #1 MASTER KEYED
- 6) ON GREENWAY (M.U.P.) A MINIMUM OF ONE BOLLARD WITH A CLEARANCE OF 1.4m FROM EDGE OF WALKWAY SURFACE
- 7) IF SITUATION WARRANTS ADDITIONAL BOLLARDS MAY BE ACCEPTABLE WITH A 1.4m CLEAR OPENING BETWEEN BOLLARDS



PADLOCK LUG



ASSEMBLY

ALL DIMENSIONS IN MILLIMETERS
UNLESS NOTED OTHERWISE

TITLE

BOLLARD – REMOVABLE RESTRICTION POST

**THE CORPORATION OF THE
TOWNSHIP OF LANGLEY**

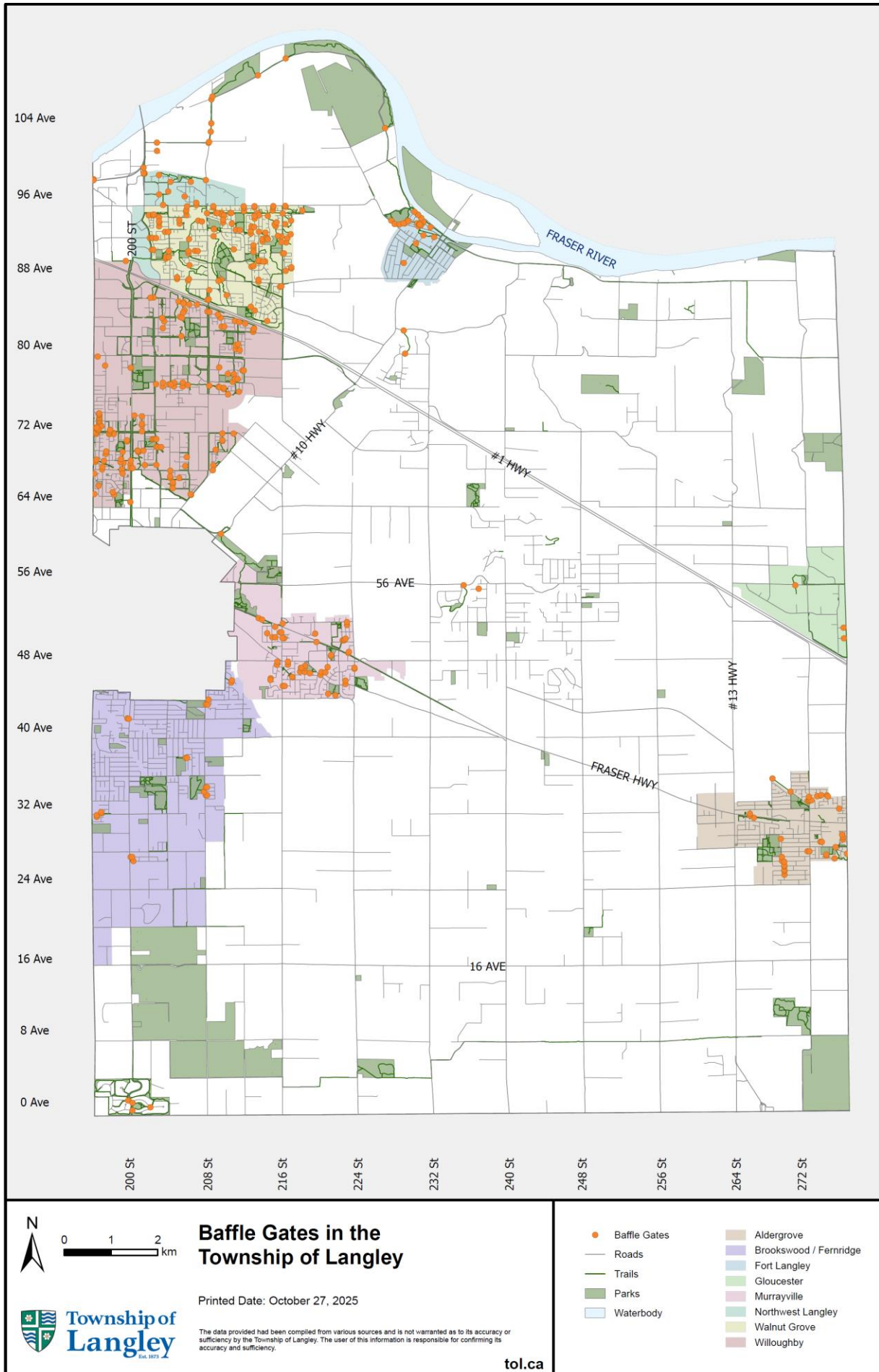
DATE APR 2019

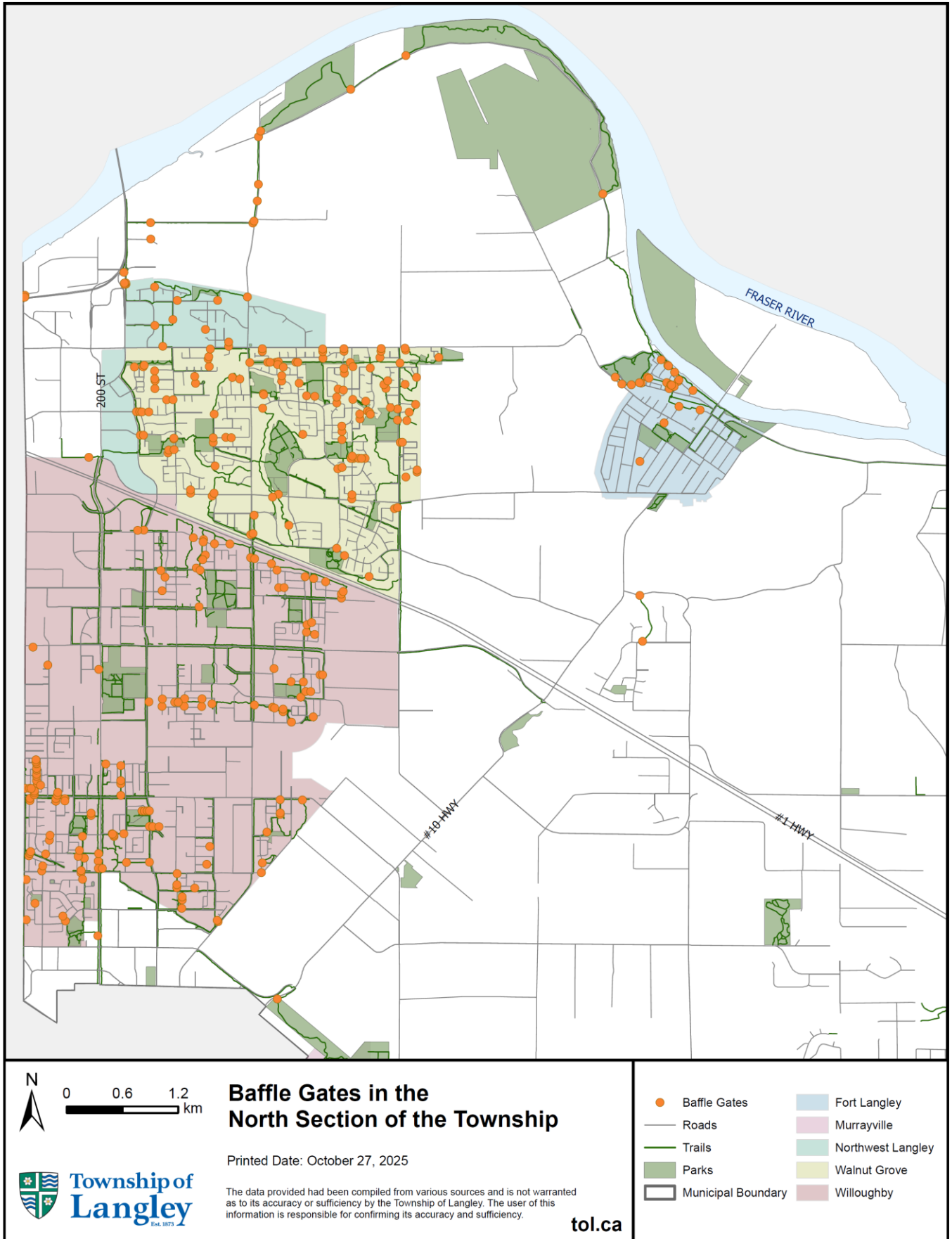
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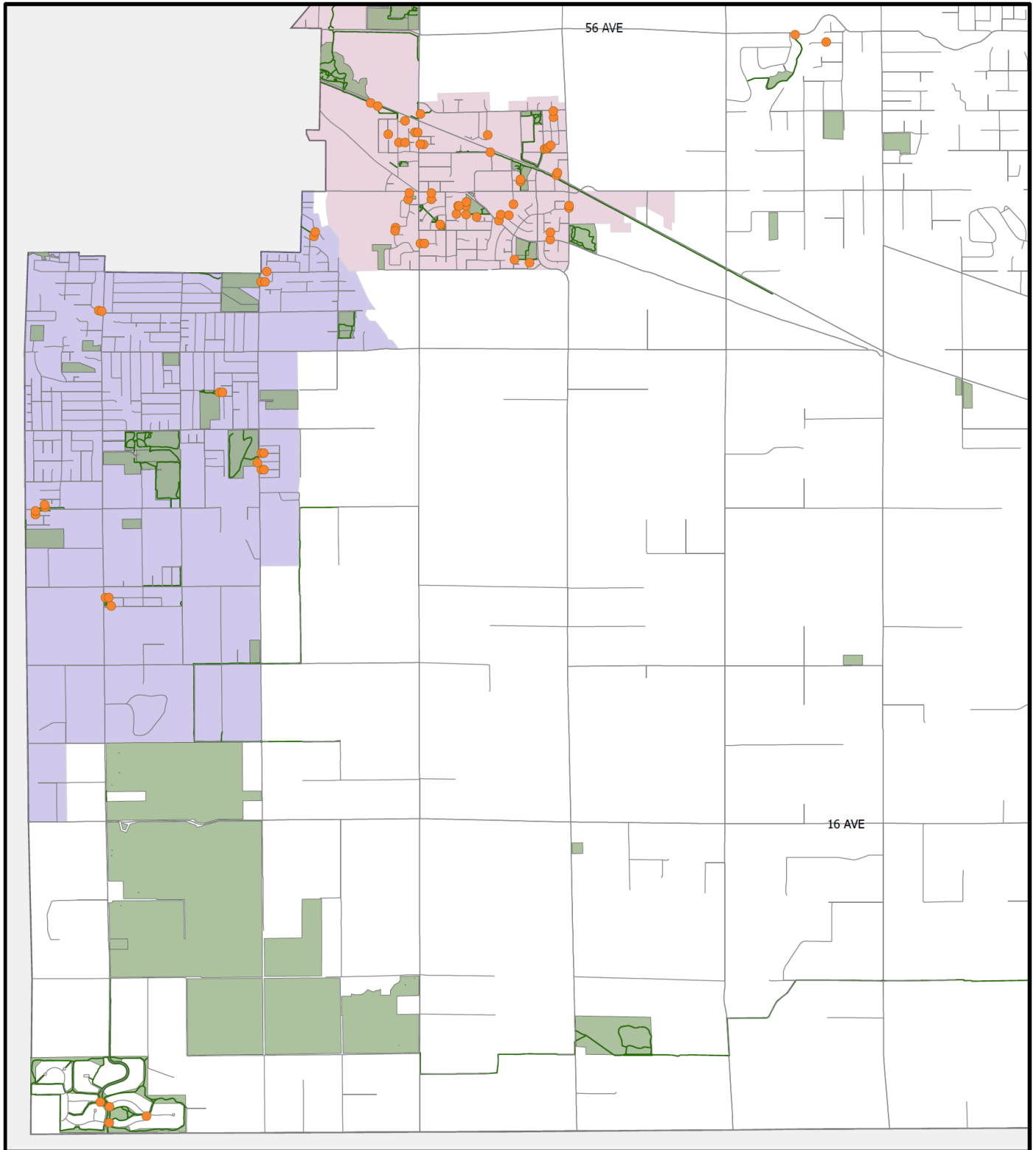
S.D.S.B. No.:



TLR 22







0 0.7 1.3 km

Baffle Gates in the South Section of the Township

Printed Date: October 27, 2025

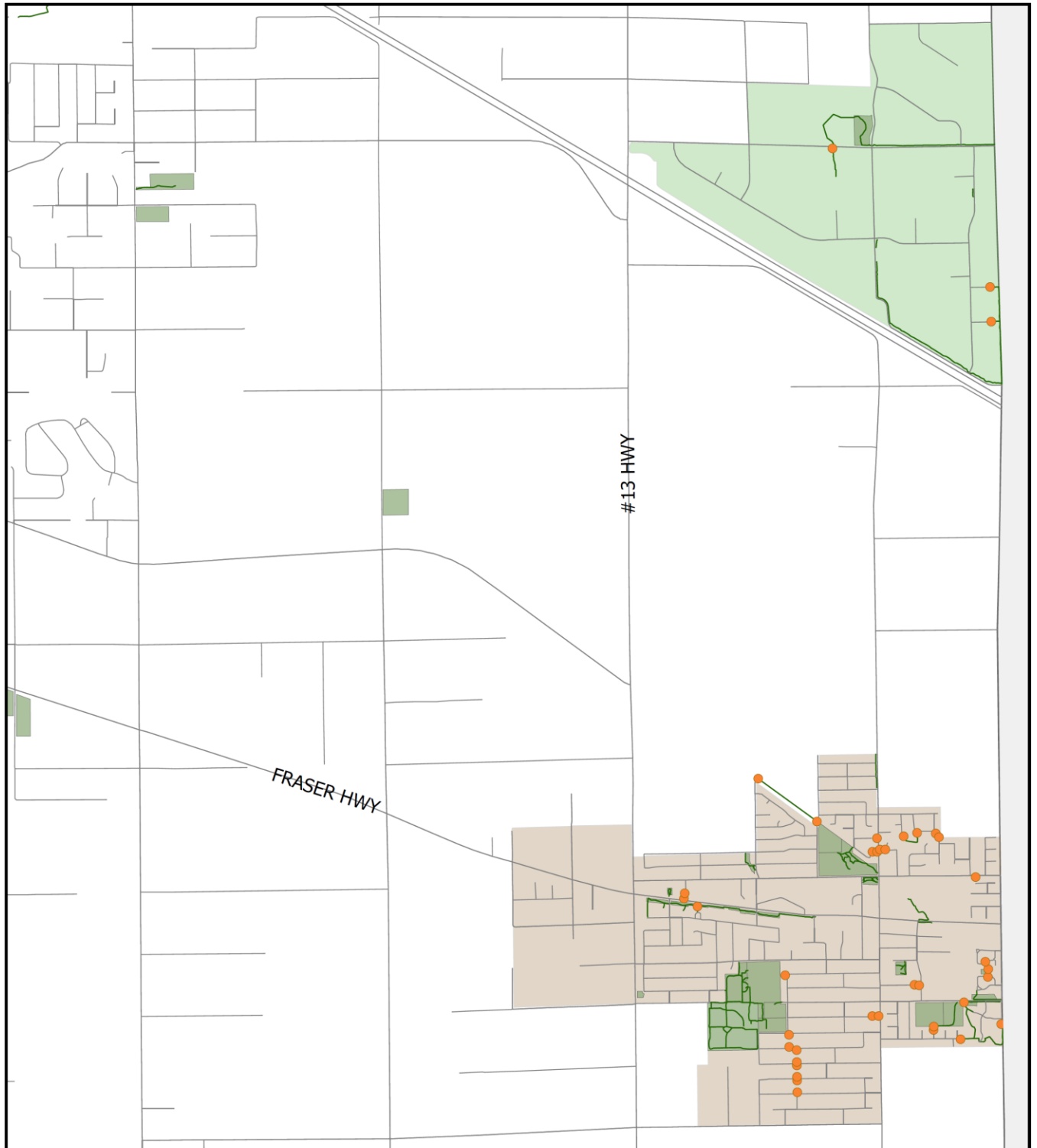


**Township of
Langley**
Est. 1873

The data provided had been compiled from various sources and is not warranted as to its accuracy or sufficiency by the Township of Langley. The user of this information is responsible for confirming its accuracy and sufficiency.

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- Baffle Gates
- Roads
- Trails
- Parks
- Municipal Boundary
- Brookwood / Fernridge
- Murrayville



0 0.4 0.8 km

Baffle Gates in the East Section of the Township

Printed Date: October 27, 2025



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- Baffle Gates
- Roads
- Trails
- Parks
- Municipal Boundary
- Aldergrove
- Gloucester