



Township of East Garafraxa

Town of Caledon

Township of Centre Wellington

Town of Halton Hills

Township of Guelph-Eramosa

Map 24

Legend

- | | | |
|----------------------|-----------------------|--------------------------------|
| Watercourse | County Roads | On-street Time Limited Parking |
| Trail | Town Roads (Rural) | Parking |
| Wetlands | Town Roads (Urban) | Park |
| Municipal Boundaries | Town of Erin Boundary | |

Scale

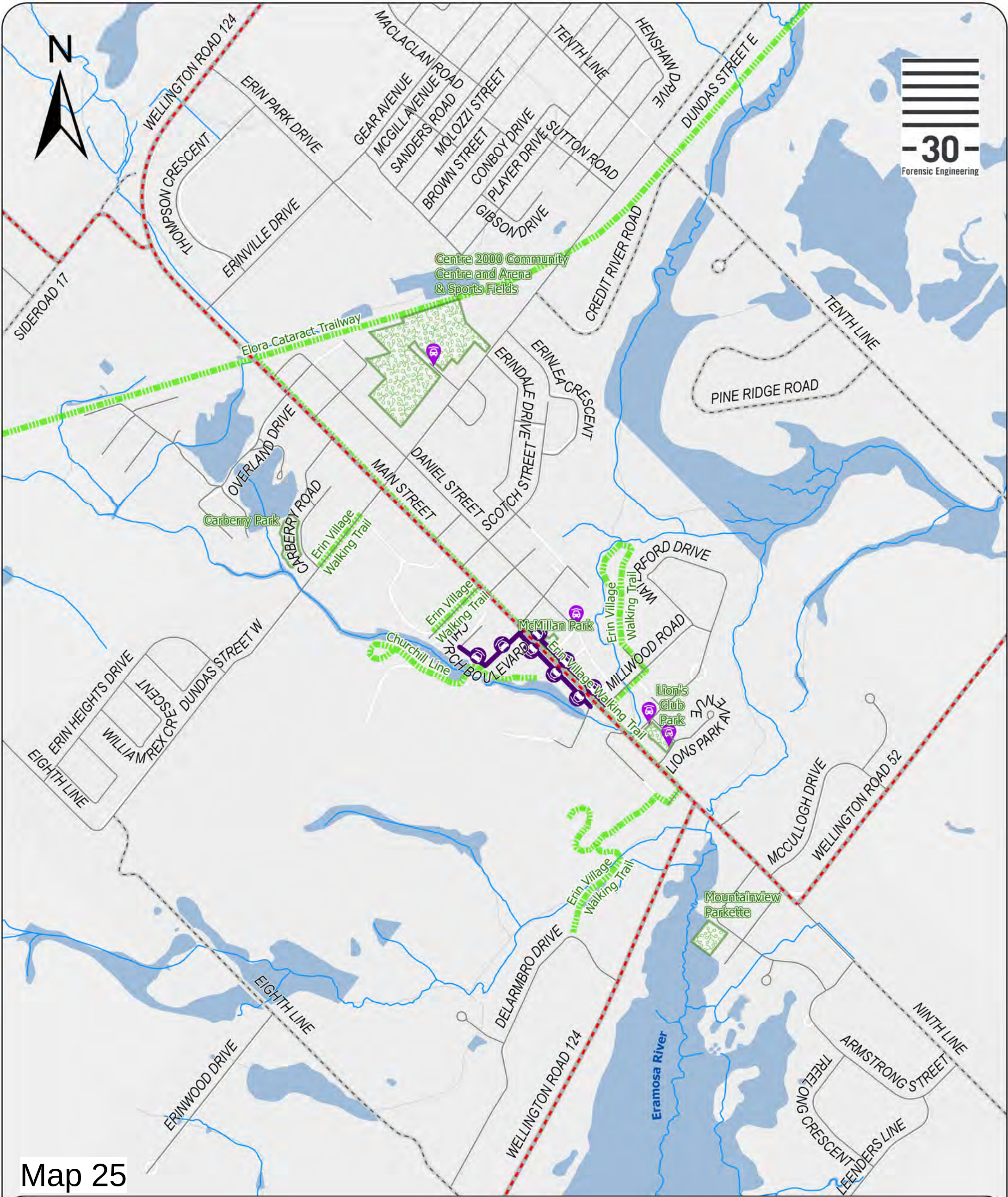
0 0.75 1.5 3 4.5 6 Kilometers

TOWN OF
ERIN

Town of Erin

TRANSPORTATION MASTER PLAN

Existing Parking



Map 25

Legend

Watercourse

Trail

Wetlands

Municipal Boundaries

County Roads

Town Roads (Rural)

Town Roads (Urban)

Town of Erin Boundary

On-street Time Limited Parking

Parking

Park

Scale

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Kilometers

TOWN OF
ERIN

Town of Erin

TRANSPORTATION MASTER PLAN

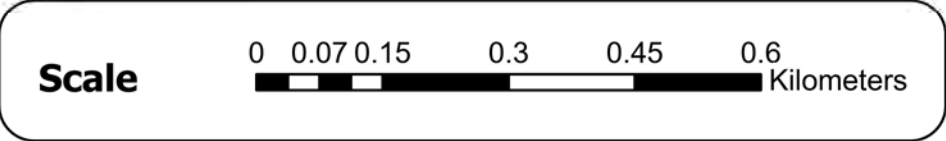
Erin Village Existing Parking



Map 26

Legend

Watercourse	County Roads	On-street Time Limited Parking
Trail	Town Roads (Rural)	Parking
Wetlands	Town Roads (Urban)	Park
Municipal Boundaries	Town of Erin Boundary	



2.8 Existing Traffic Conditions

2.8.1 Travel Demand Trends

Understanding existing travel patterns is essential for the effective planning and development of a municipality's transportation network and infrastructure. Travel pattern data for the Town of Erin was sourced from the 2016 Transportation Tomorrow Survey (TTS).

As illustrated in **Figure 12** and **Figure 13**, private automobiles remain the predominant mode of transportation in the Town of Erin, with over 85% of commuters relying on personal vehicles. The remaining trips are distributed among carpooling (over 7%), walking and cycling (1%), and public transit (less than 1%). The low percentage of public transit usage reflects the absence of public transit and GO Transit services within the Town.

Based on 2016 TTS data, home-to-work trip patterns within and beyond the Town of Erin are summarized in **Table 7**. Among trips leaving the Town, 7% are destined for Fergus and 5% for Eramosa, while more than 88% of trips remain within the Town, highlighting a strong local commuting trend. Conversely, as shown in **Table 8**, 87% of outbound trips from Erin are directed toward neighbouring municipalities, including Peel Region, Halton Region, Wellington County, and the City of Toronto. This suggests that while many residents live in the Town of Erin, a significant proportion commute to employment opportunities outside the municipality.

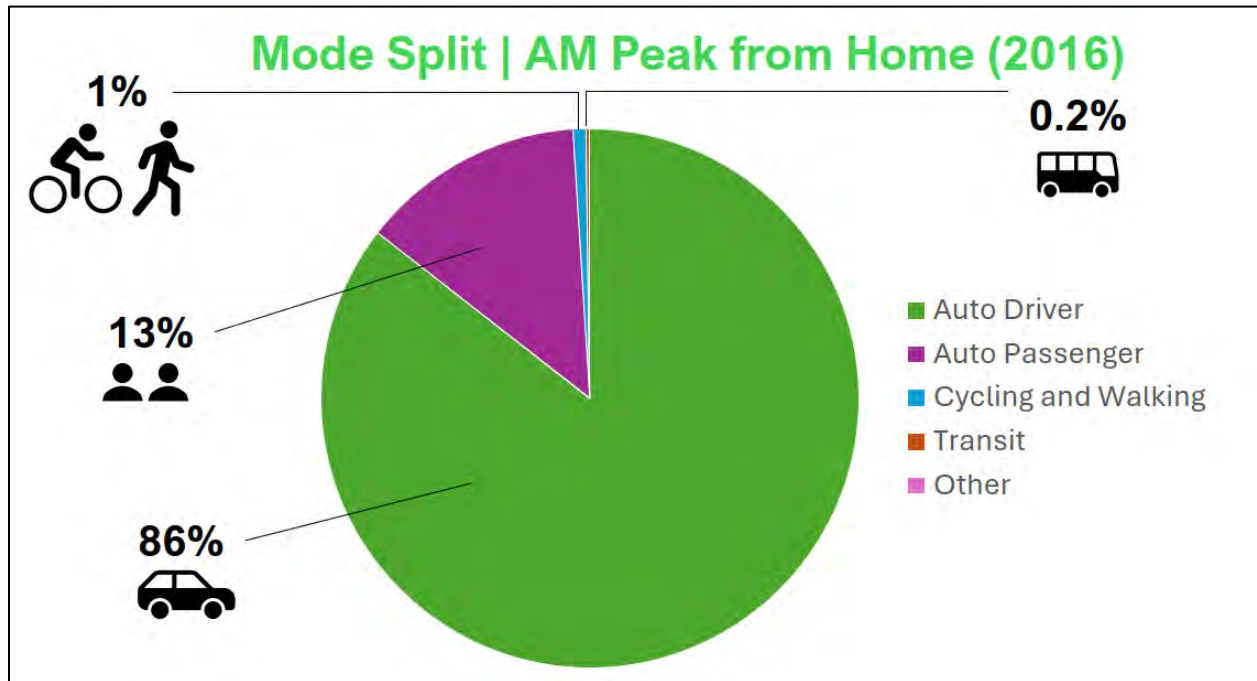


Figure 12: AM Peak Mode Split – All Purposes

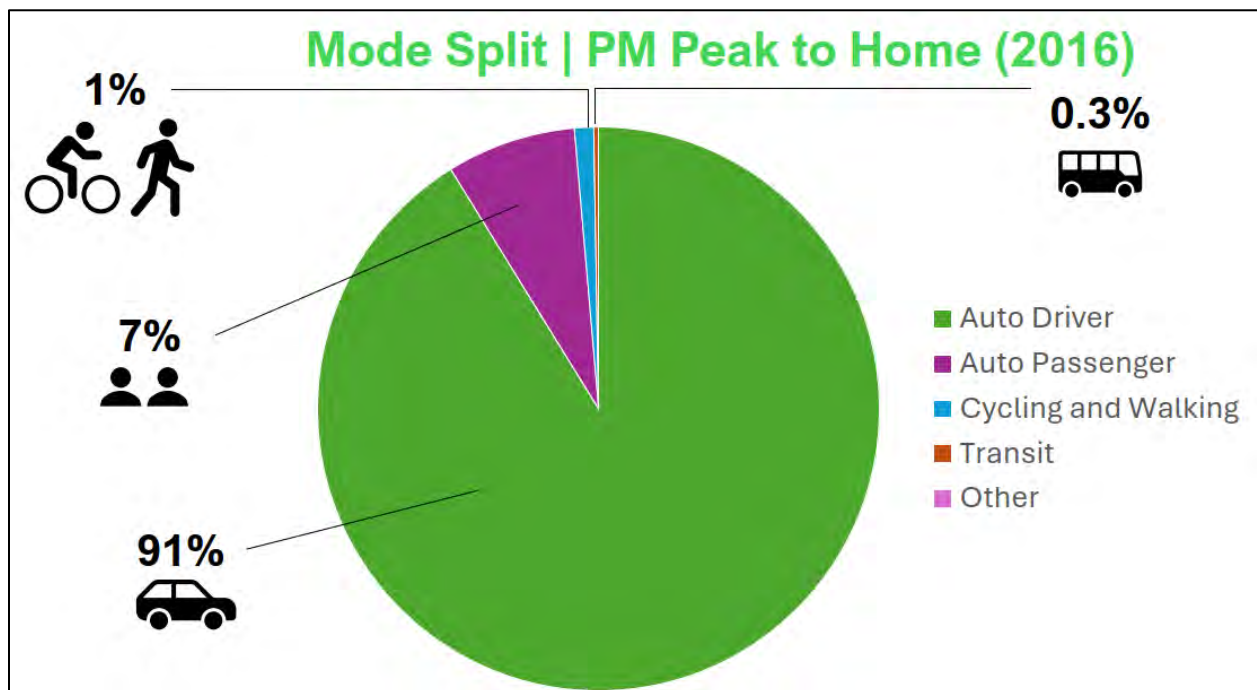


Figure 13: PM Peak Mode Split – All Purposes

Table 7: Home-to-Work Daily Trips from Town of Erin to Other Municipalities in Wellington County

Home to Work Daily Trips from Town of Erin to Other Areas in the County of Wellington (AM Peak)			
Location	TTS Zone	Trips	% of Trips
Other Municipalities	3707 – 37011, 3713	0	0%
Fergus	3712	21	7%
Eramosa	3714	17	5%
Within Erin	3714, 3715	276	88%
Total		314	100%

Table 8: Home to Work Daily Trips from Town of Erin to Outside Region

Home to Work Daily Trips from Town of Erin to Outside GTA Areas (AM Peak)		
Location	Trips	% of Trips
Guelph City	89	4%
Halton Region	344	15%
Hamilton	17	1%
Peel Region	1,063	46%
Toronto	294	13%
Waterloo Region	146	6%
York Region	50	2%
Wellington County	314	14%
Total	2,317	100%

2.8.2 Network Traffic Volumes

Existing Traffic Volumes

Understanding existing traffic volumes in the Town of Erin is crucial for assessing traffic demand characteristics, forecasting future conditions, and developing a well-calibrated model for analyzing road capacity and Level of Service (LOS) on both existing and future road networks.

To support this analysis, Automatic Traffic Recorder (ATR) counts were collected at 27 roadway segments in November 2024. Data was gathered continuously over two consecutive weekdays, covering 24-hour periods. These counts were used to estimate the Annual Average Daily Traffic (AADT) for each segment. The 2024 AADT volumes for the assessed road segments within the Town of Erin are illustrated in **Map 27**. AADT represents the estimated total volume of vehicles travelling in both directions on a specific roadway segment on any given day of the year. This metric is a critical component in road network analysis and is used for the following purposes:

- Assessing roadway capacity by comparing available infrastructure to traffic demand and its associated LOS.
- Guiding roadway design and maintenance classifications based on traffic volume and usage patterns.
- Establishing priorities for maintenance, rehabilitation, and reconstruction to optimize network efficiency and longevity.



Township of East Garafraxa

Town of Caledon

Township of Centre Wellington

Town of Halton Hills

Township of Guelph-Eramosa

Map 27

Legend

Watercourse

Trail

Wetlands

Municipal Boundaries

County Roads

Town Roads (Rural)

Town Roads (Urban)

Town of Erin Boundary

AADT

89 - 1000

1001 - 2000

2001 - 3000

Scale

0 0.75 1.5 3 4.5 6 Kilometers

TOWN OF
ERIN

Town of Erin

TRANSPORTATION MASTER PLAN

Existing Annual Average Daily Traffic (AADT)

Vehicle Classifications

Classifications of vehicles operating on the Town's road network were obtained using ATR data collected at 27 roadway segments in November 2024. Vehicle counts were analyzed based on axle configurations to identify areas with high truck volumes. The predominant vehicle classification on the Town's network consisted of cars and trailers, accounting for between 50% and 75% of total traffic. Bicycle volumes were generally low, representing less than 2% of total traffic, except on Fifth Line between Wellington Road 50 and Sideroad 10, where they reached up to 10%.

The analysis primarily focused on corridors where trucks comprised more than 10% of total traffic. Most Town roads experience low truck volumes (less than 10%), likely due to seasonal load restrictions. **Table 9** identifies the roadways within the Town of Erin where commercial or heavy vehicle traffic exceeds 10%. The high truck volumes on these roads can be attributed to their strategic locations, which provide access to key economic activities and transportation routes.

Additionally, the County of Wellington Road Master Action Plan (2021) indicates that Wellington Road 24 (Trafalgar Road) experiences truck volumes of up to 10% of daily traffic, particularly in the Town of Hillsburgh. In contrast, Main Street (Wellington Road 124) in the Village of Erin records lower truck traffic, with trucks comprising 5% or less of daily volumes.

These routes play a critical role in providing direct access to major roadways, urban settlements, and commercial hubs. Trucks utilize these roads to connect to larger, unrestricted highways, facilitating more efficient travel. Notably, County roadways help truck and heavy vehicle operators avoid seasonal restrictions or weight limits imposed on Town roads.

November 2024 ATR data as well as detailed results on the traffic percentages of different vehicle classes are presented and summarized in **Appendix A**.

Table 9: Commercial Vehicle Percentages

Road	Total Volume	Percentage of Heavy Trucks
Eighth Line from Orangeville Street to Wellington Road 22	798	23.40%
Eighth Line from Sideroad 5 to Wellington Road 42	92	11.90%
Sixth Line from Wellington Road 22 to Sideroad 17	121	14.10%
Eramosa-Erin Town Line from Wellington Road 124 to Wellington Road 50	140	12.10%

2.8.3 Intersection Volumes

A traffic count program was carried out at 11 key intersections across the Town of Erin to assess traffic demand, vehicle volumes, classifications (including trucks, buses, recreational vehicles, bicycles, and pedestrians), and overall traffic operations. Conducted in November 2024, the program focused on intersections identified by Town staff for detailed review.

Data collection included both Automated Traffic Recorders (ATR) and Turning Movement Counts (TMC), as illustrated in **Map 28**. Counts were completed over two consecutive weekdays with 24-hour coverage at each location. Further details are provided below.

- ATR data was collected for 48 hours (only 24 hours were used) on November 20 and November 21, 2024.
- TMC data was collected on November 19, 2024, at 15-minute intervals between 7:00 a.m. – 10:00 a.m., 11:00 a.m. – 1:00 p.m., and 3:00 p.m. – 6:00 p.m. The recorded data was classified to account for cars, trucks, bicycles, and pedestrians.

The existing traffic volumes, including peak hourly movements at key intersections are also presented in **Appendix A**.



Township of East Garafraxa

Town of Caledon

Township of Centre Wellington

Town of Halton Hills

Township of Guelph-Eramosa

Map 28

Legend

- | | | |
|----------------------|-----------------------|--------------------------------------|
| Watercourse | County Roads | Automatic Traffic Recorder Locations |
| Trail | Town Roads (Rural) | Turning Movement Count Locations |
| Wetlands | Town Roads (Urban) | |
| Municipal Boundaries | Town of Erin Boundary | |

Scale

0 0.75 1.5 3 4.5 6 Kilometers

TOWN OF
ERIN

Town of Erin

TRANSPORTATION MASTER PLAN
ATR and TMC data collection locations

2.8.4 Intersection Analysis

Intersection operations were assessed using Synchro 12 software, which implements methodologies from the Highway Capacity Manual (HCM) 7th Edition. This analysis relied on existing traffic data to deliver insights into intersection performance. Synchro 12 evaluates key parameters such as LOS, intersection capacity utilization (ICU), control delay, and queue lengths on individual approaches.

LOS is a key metric for assessing traffic service quality, specifically determined by the average control delay per vehicle for each movement. LOS categorizes roadways and intersections based on performance measures like vehicle speed, density, and congestion. **Table 10** presents a quantitative assessment of LOS classifications, detailing the specific metrics associated with each level.

Table 10: Quantitative Assessment of LOS

Intersection Level of Service	Intersection Operations	Degree of Delay
A	Free Flow	Negligible Delay
B	Stable Flow	Minimal Delay
C	Stable Flow	Moderate Delay
D	Less Stable Flow	Long Delay
E	Unstable Flow	Substation Delays Can Occur
F	Unpredictable Flow/ Wait Through Multiple Cycles	Excessive Delays Can Occur

The LOS indicators related to unsignalized intersections are shown in **Table 11**, which are based on the average control delays at those locations:

Table 11: Average Control Delay and LOS

Level of Service	Unsignalized Intersection Average Control Delay (sec/veh)
A	0 – 10
B	>10 – 15
C	>15 – 25
D	>25 – 35
E	>35 – 50
F	>50

As part of the Town of Erin's TMP, it was requested that a traffic operations assessment be undertaken for eleven (11) intersections within the Town as selected by the Town. **Table 12** shows the results of the analysis and lists intersection locations, the type of traffic control, and each intersection's overall LOS during AM and PM peak periods. **Appendix B** contains the complete traffic report analysis as part of this study.

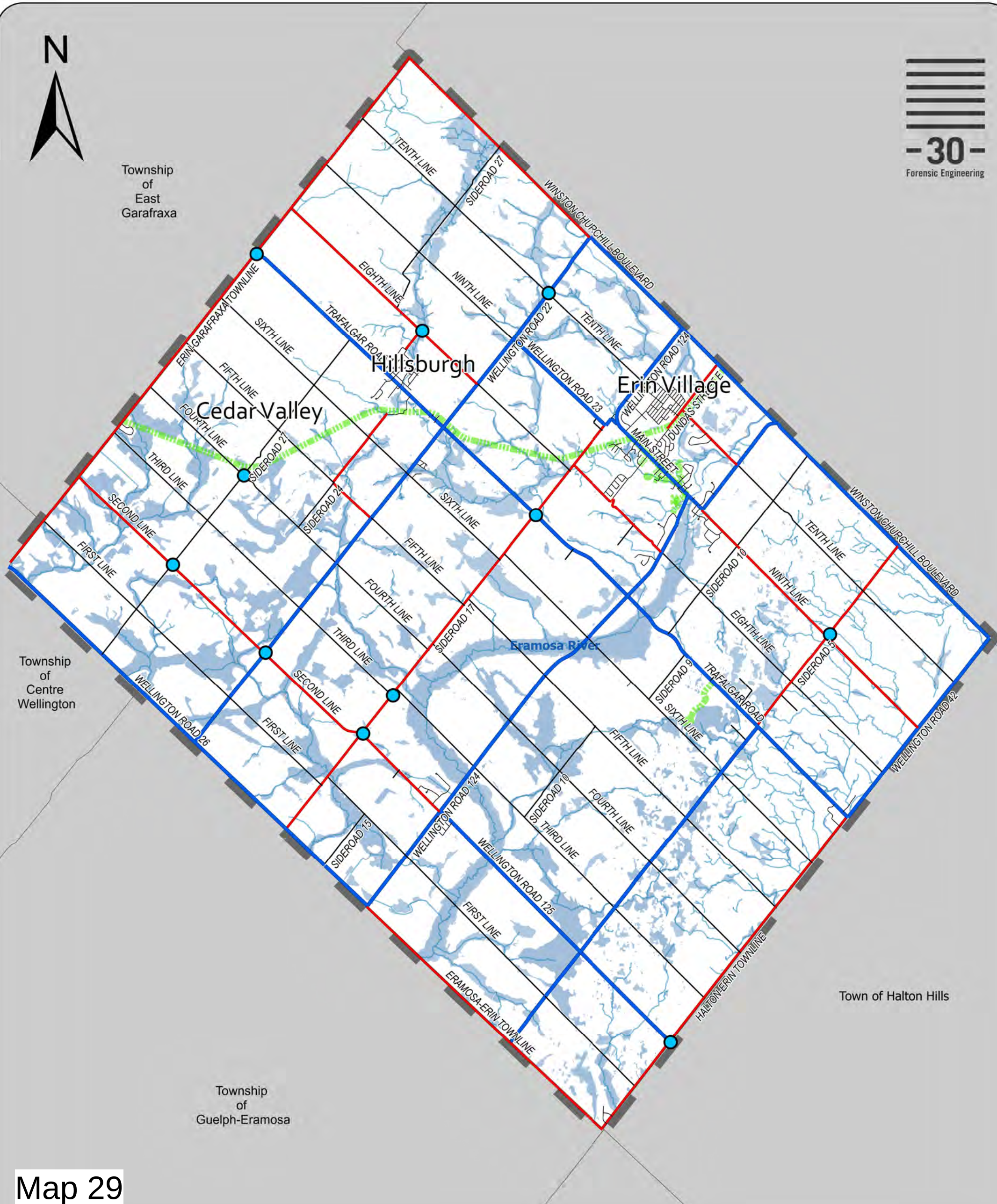
Table 12: Existing Traffic Operation Analysis

Intersection	Intersection Type	Roadway Classifications	LOS	
			AM Peak	PM Peak
Wellington Road 24 (Trafalgar Road) at Erin Garafraxa Townline	Stop-Controlled (on Erin Garafraxa Townline)	Arterial (Wellington Road 24-Trafalgar Road)) Collector (Erin Garafraxa Townline)	A	A
Eighth Line at Orangeville Street	Tee Intersection Stop-Controlled (on Orangeville Street)	Collector	A	A
Wellington Road 22 at Tenth Line	Stop-Controlled (on Tenth Line)	Arterial (Wellington Road 22) Local (Tenth Line)	A	A
Sideroad 5 at Ninth Line	All-Way Stop-Controlled	Collectors	A	A
Wellington Road 24 (Trafalgar Road) at Sideroad 17	Stop-Controlled (on Sideroad 17)	Arterial (Wellington Road 24-Trafalgar Road) Collector (Sideroad 17)	A	A
Sideroad 27 at Fourth Line	Stop-Controlled (on Fourth Line)	Local Roadways	A	A
Sideroad 27 at Second Line	Stop-Controlled (on Second Line)	Collector (Second Line) Local (Sideroad 27)	A	A
Wellington Road 22 at Second Line	Stop-Controlled (on Wellington Road 22)	Arterial (Wellington Road 22) Collector (Second Line)	A	A
Sideroad 17 at Second Line	Stop-Controlled on Sideroad 17)	Collectors	A	A
Wellington Road 125 at Halton-Erin Townline	Stop-Controlled (on Halton-Erin Townline)	Arterial (Wellington Road 125) Collector (Halton-Erin Townline)	A	A
Sideroad 17 at Third Line	Tee Intersection Stop-Controlled (on Third Line)	Collector (Sideroad 17) Local (Third Line)	A	A

According to the performed traffic operation assessments shown in **Table 12**, all unsignalized intersections operate at an acceptable LOS of A. **Map 29** and **Map 30** illustrate the LOS of the studied intersections during the AM and PM peak hours.



Township of East Garafraxa



Map 29

Legend

- | | | |
|----------------------|------------------------|-------|
| Watercourse | Arterial Road (County) | LOS A |
| Trail | Collector Road | LOS B |
| Wetlands | Local Road | LOS E |
| Municipal Boundaries | Town of Erin Boundary | |

Scale

0 0.75 1.5 3 4.5 6 Kilometers

TOWN OF
ERIN

Town of Erin

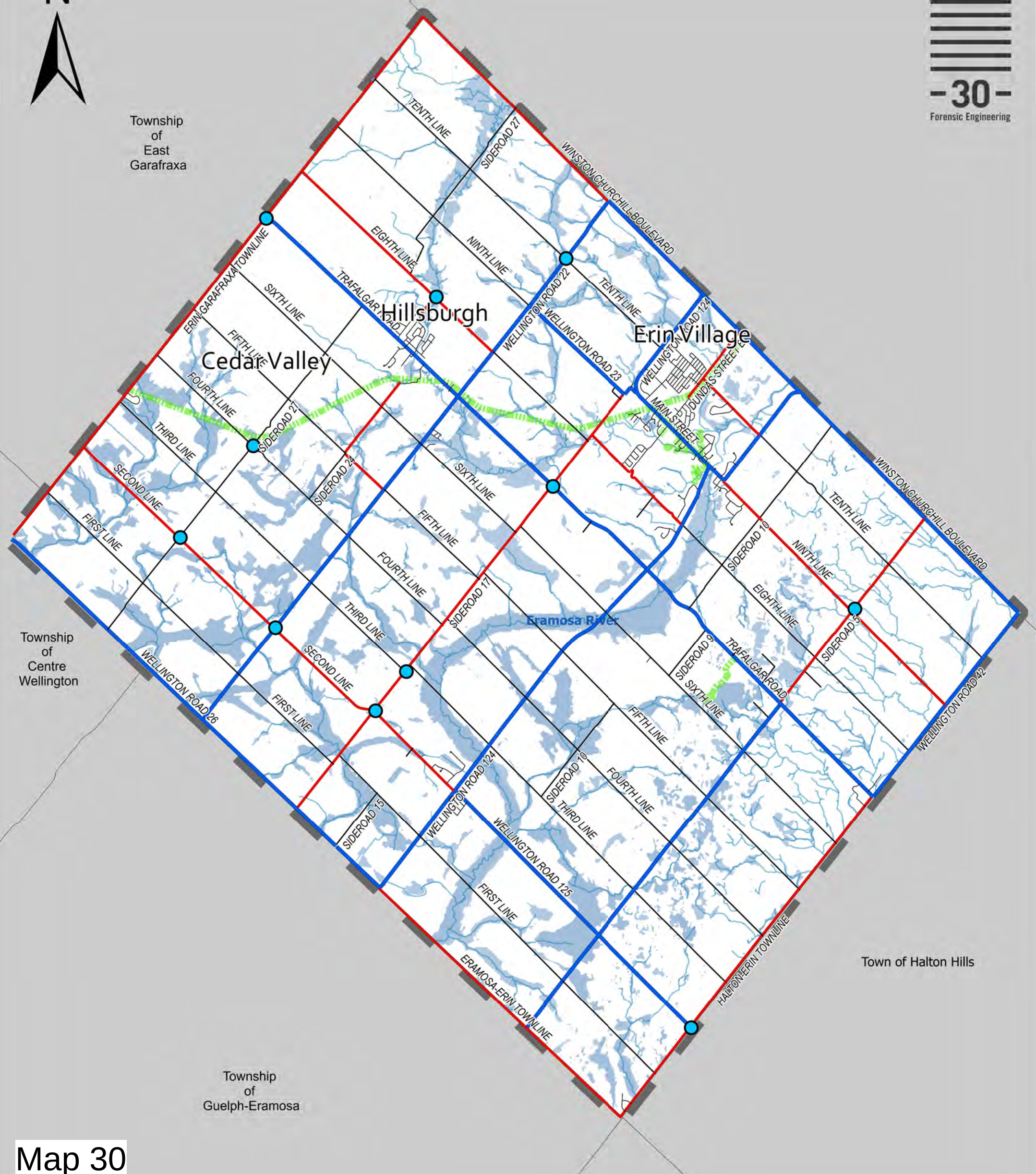
TRANSPORTATION MASTER PLAN

Existing Level of Service (LOS)

(During AM Peak Hour)



Township
of
East
Garafraxa



Map 30

Legend

- Watercourse
- Trail
- Wetlands
- Municipal Boundaries
- Arterial Road (County)
- Collector Road
- Local Road
- Town of Erin Boundary
- LOS A
- LOS B
- LOS E

Scale

0 0.75 1.5 3 4.5 6 Kilometers

TOWN OF
ERIN

Town of Erin

TRANSPORTATION MASTER PLAN

Existing Level of Service (LOS)

(During PM Peak Hour)

2.9 Collision Data Review

A high-level collision analysis was conducted using the received data from January 1, 2020, to December 31, 2024. This review covered all corridors and intersections within the urban settlement areas.

The latest collision data over the past five years shows that 2023 and 2024 experienced the highest number of collisions, with counts of 128 (25%) and 129 (25%) respectively, indicating an upward trend in collision frequency. **Table 13** outlines key takeaways of the collision data analysis.

Table 13: Collision Data Analysis

Parameter	Statistics and Analysis	Associated Risks
Weather Conditions	72% (369) of collision occurred in clear weather condition. 14% (71) in snowy weather conditions.	Risk of collisions in adverse weather
Road Surface Conditions	62% (318) of collision occurred on dry surfaces. 37% (190) on slippery and wet surfaces.	Higher risk on wet surface, ice, packed snow, slush
Road Alignments	72% (368) of collision occurred on straight, level roads. 16% (85) on straight, hilly roads.	Potential sightline issues on hills
Causes	- Collisions with animals: 22% (114) incidents - Failure to yield the right-of-way: 13% (66) incidents - Losing control: 12.5% (64) incidents - Speed-related issues: 11.7% (60) incidents	Lack of Animal Crossing Sign
Speed	51% (262) of collision occurred over the speeds of 80 km/h. 24.5% (126) over 60 km/h.	Speeding is an issue

These statistics highlight the need to implement speed management strategies, improve road surface conditions to account for winter weather impacts, enhance road alignments, and promote safe driving behaviours to improve road safety.

2.9.1 Collisions by Severity

The analysis of collision severities indicates that the majority of incidents resulted in Property Damage Only (PDO), totalling 420 cases (82%), which is significantly higher than other categories.

Seven fatal collisions were recorded, with one impaired-related fatality. Impaired driving contributed to six (1%) PDO crashes and two personal injury crashes. In addition, 55 (11%) personal injury collisions were recorded.

This distribution underscores that most collisions lead to vehicle damage rather than severe injuries or fatalities; however, fatal collisions, personal injuries, and impaired driving remain a critical concern for both safety and enforcement.

2.9.2 Collisions by Impact Locations

As illustrated in **Figure 14**, the majority of collisions (240) occurred on through lanes (47%), followed by those within intersections (98 or 19%) and off-road locations such as ditches (87 or 17%).

This data clearly indicates that the primary areas of concern are main travel lanes and intersections, underscoring the necessity for targeted safety enhancements in these zones.



Figure 14: Distribution of Collisions Impact Locations

Table 14 and **Table 15** show the top 10 key locations where through lane collisions and intersection-related collisions have occurred.

Table 14: Key Roadways Associated with Through Lane Collisions

Sl. No.	Road Name	Number of Collisions
1	Trafalgar Road	95
2	Wellington Road 124	79
3	Wellington Road 22	40
4	Wellington Road 125	27
5	Eighth Line	21
6	Wellington Road 50	18
7	Winston Churchill Boulevard	17
8	Fourth Line	17
9	Wellington Road	17
10	Sideroad 5	16

Table 15: Key Roadways Associated with Intersection Collisions (crossroads were not documented)

Sl. No.	Road Name	Number of Collisions
1	Trafalgar Road	22
2	Wellington Road 124	14
3	Wellington Road 22	11
4	Wellington Road 50	8
5	Wellington Road 125	6
6	Sideroad 5	6
7	Dublin Line	4
8	Eighth Line	3
9	Halton-Erin Townline	3
10	Wellington Road 52	2