TOWNSHIP OF DAWN-EUPHEMIA

ASSET MANAGEMENT REPORT

2025

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2025

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EXECUTIVE SUMMARY

This Asset Management Plan provides the Township of Dawn-Euphemia with a tactical plan to manage their infrastructure assets. If the Township's assets are maintained at an acceptable level of service, it will help support the economic development and quality of life for residents in the community. This plan has been prepared as per the requirements in the Province's Municipal Asset Management Planning Regulation (O. Reg. 588/17). The Township of Dawn-Euphemia has 14 bridges, 94 culverts, about 479 km of roads, about 149 km of watermain, 6 main facilities and a 21 vehicle strong fleet. The replacement cost of these assets was estimated at $344.4 million. With 766 tax paying households in the Township, the replacement cost is about $450,000 per household.

This Asset Management Plan includes the following:

- Summary of the existing infrastructure
- Process to score the risks, level of service and theoretical priorities
- Outline of target risks and level of service scores
- Strategies that can help to efficiently manage the assets
- Assessment of available finances
- Predictions of the future level of services that will be provided
- List of financing options
- Assumptions of future changes to population and economic activity.

Information from the recently completed road and bridge needs studies were used to complete this plan. It was generally assumed that the Township wants to maintain the current average condition ratings of the road, bridge, watermain, facility and fleet assets so they can maintain the current level of service that is being provided by these assets. With the information gathered, the road and bridge reports and through discussions with Township staff, an average annual cost to address the capital improvement needs for all the asset categories investigated was calculated at $2,039,050. This was calculated to be about $817,000 more than the anticipated average annual capital budget provided for these assets within the Township.

A detailed outline of the Asset Management Strategy to help efficiently manage each major asset class has been included in the report appendices. These may need to be updated in the future to reflect changes in the Township's circumstances, regulatory changes, advances in technology, and asset condition assessments.

Overall grades that take into account the condition ratings, level of services scores, risk scores and financial sustainability scores for the evaluated asset group were calculated as per the procedure and targets outline in the plan. They are shown in the following table.

Asset Type	Current Asset Letter Grade	2016 Asset Letter Grade
Bridge	D	B-
Gravel Road	C+	D
Surface Treated Roads	C	E
Asphalt Roads	C+	D
Watermains	A	D
Facilities	B+	A+
Fleet	E	E

The above summary table suggests that the level of service and/or financing being provided for surface treated roads, bridges and fleet are less than the Township's target levels. The tables within the report show that roads are slightly underfunded while the bridges are significantly underfunded and to address the issue additional funds should be directed toward these asset types to improve the rating. Fleet is also underfunded but the reserves set aside to this point and the ongoing reserve additions should address the issue for the next 3-5 years.

When comparing the scores from 2016 to the current scores, there some asset types that scored better with this study and some that scored poorer.

To address the financial shortfall, we recommend the Township implement the management strategies presented in this report, take advantage of grant programs and, if necessary, increase tax revenues slightly. If alternative strategies are not adequate, and other savings or grants are not obtained, a tax increase will be necessary. To provide a balanced capital funding program within five years, it is estimated a total tax increase of 19% above inflation or an average annual increase of about 4% in each of the next 5 years will be required.

The Township prefers to follow a pay as you go financing strategy and maintain some money in reserves for emergencies. With the changes proposed, this strategy should be able to maintain the Township's assets at a level of service, similar to their current state without drastically reducing the amount of money held in reserves. Alternatively, some of the debt financing or project financing options presented in this plan can be implemented, as required, in place of the pay as you go strategy.

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TOWNSHIP OF DAWN-EUPHEMIA
ASSET MANAGEMENT PLAN

1.0 INTRODUCTION

The Province of Ontario, Ministry of Infrastructure, want municipalities to prepare an Asset Management plan per their Municipal Asset Management Planning Regulation (O. Reg. 588/17). Per the Reg 588/17, the core municipal assets are listed as roads, bridges, water and wastewater and stormwater systems. The Township of Dawn-Euphemia is a lower-tier municipality within the region of Lambton County. The focus of the Township economy is agriculture, with seven Settlement Areas at Florence, Shetland, Oakdale, Edys Mills, Rutherford, Cairo and Bentpath. At this time, municipal sanitary systems do not exist within the Township. The Township owns a water distribution system and purchases its water from the neighbouring Township of Enniskillen. Therefore, this plan includes roads, bridges, storm drains and watermains, located on local roads and collectors within the Township; arterial roads being the responsibility of the County. Also included in this plan are Township owned building facilities and Township maintenance fleet vehicles.

The Township of Dawn-Euphemia is primarily agriculturally based with a large natural gas compressor station located in the Township.

The Township of Dawn-Euphemia created a Strategic Plan in 2022 Among other items, the plan establishes that the Township's corporate mission is to *"...provide the highest standards of integrity and responsible community leadership through sound financial management, the delivery of the most efficient and effective level of services possible and the promotion of a healthy and sustainable quality of life.*[1]*"* The plan also identifies features of the community that are highly valued and that the Township wishes to maintain. These include[2]:

1. Affordability - including lifestyles, housing and taxes.
2. Sense of Community – small town feel.
3. Natural Environment – access to natural areas throughout the Township that offer a variety of activities.
4. Leadership – moving the community forward.
5. Quality of Life – maintaining an enjoyable rural lifestyle welcoming for children.

[1] *Township of Dawn-Euphemia Strategic Plan*, 2022-2027.
[2] Ibid.

6. Quality of Municipal Services – maintaining services offered to the public.
7. Rural Based Community –maintain a strong agricultural sector.
8. Diversified Assessment Base – integrate a strong industrial assessment into the community.

The Strategic Plan also identifies goals for the Township. Two of which will be directly supported by this asset management plan. The first goal is ensuring long term financial sustainability which includes in its strategic actions *creating 5 to 10-year capital budget and developing a capital asset management plan*[3]. The second goal is addressing the Township's municipal infrastructure and facility needs which includes in its strategic actions *completing a comprehensive infrastructure needs study and undertake road, culvert and bridge improvements as required and financially feasible* as well as *developing a water main replacement program*[4].

The Asset Management Plan will be referenced during the annual budget process to determine how proposed funding levels will address the recommended asset work. Any identified budget shortfalls will require a decision by the Township as to whether the work can and will be delayed, and whether alternate funding options will need to be pursued. In the long term the Asset Management Plan will be referenced when deciding taxation and user rates.

The purpose of the Asset Management Plan is to preserve the infrastructure, manage risk and provide satisfactory levels of service to the public in the most cost-effective manner over the asset's lifecycle for all assets owned by the Township. The plan considers required integration between different asset groups (i.e. roads and bridges) to minimize duplication of cost and effort for a given location. For example, if a road requires re-paving which is expected to last 30 years, but a bridge deck is not expected to require work for 2 years, then the bridge deck repair may be moved up or the road work delayed in order to avoid having to remove new pavement when repairing the bridge deck.

Since the Asset Management Plan includes projected expenses for the 10-year period, it improves the Township's understanding of future budget pressures and assists in predicting future infrastructure funding gaps and provides targets to close the gaps, if they exist. It also provides the opportunity to achieve cost savings by identifying deterioration early on and taking appropriate action to rehabilitate the asset. This information can then be used by Council when deliberating on budget matters and Township staff when developing capital and maintenance work plans.

The Asset Management Plan contains detailed recommended work lists for the next 10 years. The Township assets included in this plan were last assessed within the years listed in Table 1. The assets and Asset Management Plan will be reviewed and updated about every 5 years at which time the Township will evaluate whether other assets merit inclusion in the plan. Safety reviews of the bridges will occur every 2 years, in accordance with provincial regulations.

[3] *Township of Dawn-Euphemia Strategic Plan*, 2022-2027.
[4] Ibid.

Table 1 – Asset Condition Assessments

Asset	Last year Assessed
Bridges	2023
Roads	2023
Watermains	2024
Facilities	2024
Fleet	2024
Sewers	N/A
Stormwater systems	N/A

Once per year, the capital and key maintenance work completed by the Township should be recorded in order to maintain the accuracy of the current asset inventory.

This plan provides information on the implementation of Asset Management in the Township of Dawn-Euphemia including an overview of the current state of local infrastructure, explanation of the target levels of service or goals, strategies to help maintain the target level of service and track the performance of this plan, explanation of the Township's Financial strategies, assumptions for future changes in population and economic activity, and a list of current and future work needs identified. However, while this document and appendices include some detail, references to external documents that contain additional information should be referred to when making decisions about a particular asset.

2.0 CURRENT LEVEL OF SERVICE

The asset groups included in this plan are the bridges, roads, watermains, facilities and fleet owned and maintained by the Township. Wastewater and storm water systems do not currently exist but are listed as sections for future tracking per Reg. 588/17. A summary of these components and description of the state of the local infrastructure follows.

2.1 Bridges

There are four north-south, and one east-west county roads servicing the through traffic in Dawn-Euphemia. The municipal bridges serve all local traffic and would include construction and agricultural equipment, motor vehicles, emergency vehicles, pedestrians and cyclists. At this point, the condition of bridges and culverts does not limit use and suits the needs of the residents. Refer to Appendix A for figures and other bridge and culvert information and 10-year needs.

Table 2 below summarizes the bridge assets as of 2023. This information was taken from the Township Study by BMROSS in 2021 thru 2023 and values inflated to 2025. All the structures with spans of 3.0 m or more, were reviewed and the observations were documented in general accordance with the *Ontario Structure Inspection Manual* (OSIM). Within Appendix A is a more detailed table listing the relevant support documents, goals, proposed rehabilitation work and strategies to be used with this asset type.

Bridge Condition Index (BCI) rating is out of 100. A BCI of 0 (zero) requires immediate removal. A BCI of 100 represents a bridge in the best condition.

Table 2 – State of Local Bridge Infrastructure

Inventory Summary by Structure Type[1]	Percentage of Bridges with Loading or Dimensional Restriction	Condition Summary Average BCI	Replacement Value of Assets[1] (2025 Dollars)
14 Bridges 94 Culverts Total Structures - 108	Load - 0% Dimensional – 0%	Bridges - 75.4 Culverts - 74.7 Total Average – 74.8	Bridges - $21.64M Culverts - $32.65M Total – $54.29M

[1]The situation of boundary roads and bridges was investigated, but was not resolved for bridges prior to the AMP deadline. The structures that are located on boundary road sections that Dawn-Euphemia is lead for are identified in this table. The replacement cost for boundary bridges have been divided in half to reflect the 50/50 cost share with neighbouring municipalities. It should be emphasized that Dawn-Euphemia is financially responsible for more than 108 structures and the total real replacement value will be higher. One of the 14 bridges is a boundary bridge, and 9 of the 94 culverts listed in the above table are located on municipal boundaries. We suspect that if the boundary structures managed by a neighbouring municipality were included in the list of structures above it would only increase the total replacement cost a relatively small amount.

To provide a common point of reference for the replacement values provided in Table 2, the total replacement value of the bridge assets is approximately $27,600 per person based on a Township population of 1,967 (2023 statistics from Township website). The total value of the proposed rehabilitation work over the next ten years equals $5.8 million, which is approximately 10% of the replacement cost of the bridge assets.

2.2 Roads

There are four north-south, and one east-west county roads servicing the through traffic in Dawn-Euphemia, with the municipal roads serving all local traffic. Appendix B contains figures of the road network, conditions and 10-year needs.

Table 3 below has been prepared to quantify the centerline kilometers of road owned and maintained by the Township, and indicates the relative condition of these assets. The condition score is out of 10, with 10 being a new road, and 5 being a road ready for reconstruction. The methodology used to evaluate the roads is in general accordance with that outlined in the Ministry of Transportation's Method and Inventory Manual for Small Lower Tier Municipalities. Within Appendix B is a more detailed table listing the relevant support documents, goals and strategies to be used with this asset type.

Table 3 – State of Local Road Infrastructure

Inventory Summary by Road Surface Type[1] (km)	Lane km per square km (DE=446km^2)	Condition Summary Average Surface Condition Rating (Length Weighted)	Replacement Value of Assets[2] (2025 Dollars)
Gravel – 412.6 km Surface Treated – 25.9 km Asphalt – 39.0 km Earth – 1.5 km Total – 479.0 km	Arterial – N/A Collector – 0.53km/km^2 Local – 0.54km/km^2	Gravel – 7.6 Surface Treated – 7.4 Asphalt – 8.8 Average Asphalt and Surface Treated – 8.2	Gravel -$198.5M Surface Treated - $13.1M Asphalt -$26.1M Total -$237.7M

[1] Dawn Euphemia has entered into boundary road agreements with all neighbouring municipalities. A lead municipality has been identified, and all capital costs are 50/50. Of the total length per surface type, the length of boundary roads for gravel is 54km, 8km for surface treated and 10km for asphalt.
[2] Replacement costs for boundary road sections have been reduced by half and have been included in the totals listed above.

There are 237 km of Collector type roads within the Township and the remainder are local roads. There are no roads that meet the arterial definition of Class 1 or 2. The average scores for the Asphalt and Surface Treated Roads were grouped together and going forward were referred to as asphalt surfaces as some of the Surface Treated Roads have an asphalt base. To provide a common point of reference for the replacement values provided in Table 3, the total replacement value of the road assets is approximately $120,500 per person based on a Township population of 1,967.

2.3 Watermains

The water system in the Townhip of Dawn-Euphemia is distribution only. Appendix C contains figures of the water system and 10-year needs. Table 4 below has been prepared to summarize the watermains included in this Asset Management Plan. The methodology used to evaluate the watermains is in general accordance with that outlined in the Guide for Municipal Asset Management Plans; an age-based condition score out of 5, with 1 being a new asset, and 5 having exceeded 70% of its life expectancy. A further description of the methodology used and the watermain network is outlined in Appendix C, along with a more detailed table listing the relevant support documents, goals and strategies to be used with this asset type.

Table 4 – State of Local Watermain Infrastructure

Inventory Summary	Percentage of Properties Connected to Municipal Water	Percentage of Properties with Fire Flow[1] Available	Condition Summary Average Condition Rating (Length Weighted)	Replacement Value of Assets (2025 Dollars)
Watermains – 148.1 km Master Meters & Pits – 5 Service Meters - 424	19.3%	Within 90m of hydrant – 7.1% Within 91-180m of hydrant – 4.4% Greater than 180m from a hydrant – 88.6%	Watermains – 1 Master Meters – 4.6 Service Meters – 1.1	Watermains – $34.94M Master Meters – $40,000 Service Meters - $244,000 Total - $35.2M
Reliability of Water System: Since the Township does not operate a treatment system, boil water advisories are not issued by them, unless associated with watermain repairs/maintenance. There is on average 1 watermain repair every 18 months that may or may not include a service interruption or Boil Water Advisory.				

1. Dawn-Euphemia does not have a comprehensive model or a comprehensive flow testing program that could be used for this measure, nor does the AMP Guidance document provide a defined fire flow value that must be achieved to be considered adequate. For this reason, we are of the opinion that most hydrants would provide flow for fires, and that proximity to a hydrant was a good measure for the AMP in the absence of hard data.

To provide a common point of reference for the replacement values provided in Table 4, the total replacement value of the watermain assets is approximately $17,800 per person based on a Township population of 1,967.

2.4 Sewers

The Township of Dawn-Euphemia currently does not operate any municipal sanitary sewer systems and has no current plans to add any in the future. This section is included to comply with Municipal Asset Management Planning Regulation (O. Reg. 588/17).

2.5 Stormwater systems

Stormwater management in the Township of Dawn-Euphemia is currently serviced by Municipal Drains and natural watercourses. The Township does not have any municipal stormwater systems. This section is included to comply with Municipal Asset Management Planning Regulation (O. Reg. 588/17).

To gain an appreciation for the impact of the 100-year storm on private and municipal infrastructure, Appendix D contains a figure outlining the extent of the flood plain. The St Clair Region Conservation Authority provided information that delineates the regional flood hazard

area, equivalent to the extent of flooding expected under Hurricane Hazel conditions. The 100-year flood plain has not been delineated and it should be recognized that the regional flood standard is significantly higher than the 100-year.

In terms of resilience to flood events, 25% of the properties are entirely outside of the regional flood plain. In a rural area, this measure may not be as useful for determining flood impacts to people and property. To further refine the stormwater impacts of a 100-year storm, a building point GIS layer was obtained from the Ontario Data Warehouse. It was found that 61% of the buildings were outside of the estimated regional flood limits.

2.6 Facilities

Table 5 below has been prepared to summarize the facilities included in this Asset Management Plan. Within this study only sizable buildings or other facilities with an estimated value greater than $150,000 has been listed as a facility. The other smaller facilities will be maintained under the operating budget, as required. These facilities have been reviewed by BMROSS staff and based on the needs identified and estimated replacement value, a Facility Condition Index score out of 100 was calculated. Within Appendix E is a more detail table listing the relevant support documents, goals and strategies to be used with this asset type.

FCI Score
95-100: Good
90-95: Fair
70-90: Poor
< 70: Critical

Table 5 – State of Local Facility Infrastructure

Asset Group	Inventory Summary by Location	Condition Summary Average FCI	Replacement Value of Assets (2024 Dollars)
Facilities	Municipal Office	100	$ 1,284,000
	Dawn Fire Hall	97	$ 1,704,000
	Rutherford PW Depot	99	$ 1,522,000
	Cairo PW Depot	100	$ 2,445,000
	Community Centre	100	$ 4,215,000
	Shetland Library	89	330,000
		Average FCI – 98	Total – $ 11.500M

To provide a common point of reference for the replacement values provided in Table 5, the total replacement value of the facility assets is approximately $5,800 per person based on a Township population of 1,967.

2.7 Fleet

Table 6 below has been prepared to summarize the fleet included in this Asset Management Plan. This information was taken from the Township's Reserves Summary (2024) and Township staff input in 2025. Individual vehicles have been assigned an age-based condition score out of 10, with 10 being a newer vehicle, and 1 being a vehicle which has exceeded its life expectancy. Within Appendix F is a more detail table listing the relevant support documents, goals and strategies to be used with this asset type.

Table 6 – State of Local Fleet Infrastructure

Asset Group	Inventory Summary by Vehicle Type	Avg. Condition Summary (Age Based Score)	Replacement Value of Assets (2025 Dollars)
Fleet	Light Duty – 4 Fire – 5 Heavy Duty – 4 Graders – 5 Tractors – 2 Backhoe - 1	Light Duty – 4.1 Fire – 3.3 Heavy Duty – 3.3 Graders –2.9 Tractors – 8.0 Backhoe – 8 Total Average – 3.9/10	Light Duty - $0.28M Fire – $1.235M Heavy Duty - $1.35M Graders – $2.50M Tractors - $0.30M Backhoe - $0.15M Total – $5.815M

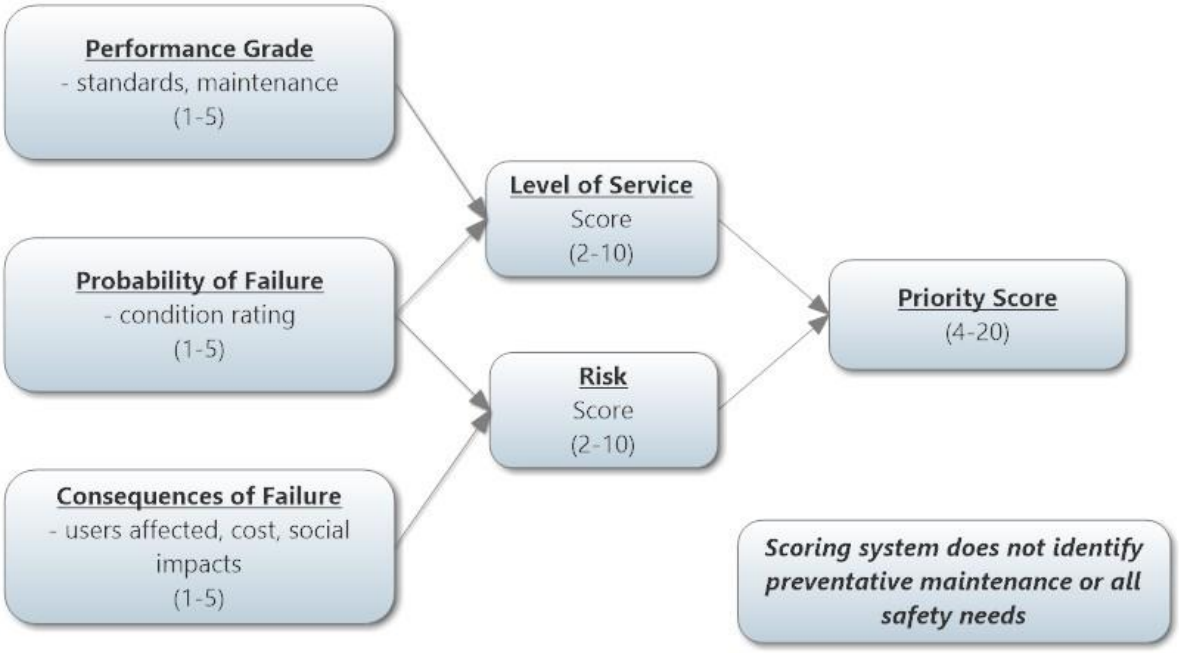
To provide a common point of reference for the replacement values provided in Table 6, the total replacement value of the fleet assets is approximately $2,900 per person based on a Township population of 1,967.

3.0 LEVEL OF SERVICE SCORING METHOD

It is the goal of the Township to ensure their assets provide an acceptable level of service to residents while they are minimizing the risks and costs associated with maintaining that asset. To track the performance of the service being provided by an asset over time, a method to evaluate the level of service being provided and the associated risks is necessary.

When evaluating the performance of individual assets in comparison to the target level of service, we believe there are three key factors that should be taken into consideration: the probability of failure, the consequence of failure, and the performance grade. While these factors can include many components, the **probability of failure** factor is generally represented by the condition rating or age of an asset. The **consequence of failure** is a score based on the number of users affected if the asset fails or other social impacts and the cost of the asset. The **performance grade** should incorporate the relative maintenance requirements of the asset and a comparison of how the asset was built versus the appropriate design standard for that particular asset. In a simplified way these components can be used as illustrated in Figure 1 to develop a Level of Service Score, a Risk Score and theoretical Priority Score for the improvements.

Figure 1
Relationship Between Data Collected and Tracked Parameter Scores



To explain how the table works, the road assets have been used. When evaluating the roads, the platform width of the road surface and the drainage condition score was used to calculate a performance grade for each road section. A score between 1 and 5 was assigned for each individual road section or asset. If the platform width of a road section is adequate for its application a score of 1 was applied. If the width was somewhat narrow, a score of 3 was applied and if the road was significantly narrower than it should be, a score of 5 was applied. Similarly, the good, fair and poor drainage condition ratings were assigned a score of 1, 3 and 5. The average of the platform width score and drainage score were used as the performance grade in the evaluation.

The condition rating was used to assign the probability of failure factor for each asset. When combining the condition rating with the other components as per Figure 1 to prioritize the work, the condition ratings are changed to a score from 1 to 5 where a road section with a condition rating of 1 is in good condition and 5 is ready for reconstruction.

The consequence of failure value has been calculated based on the assumed or supplied traffic volumes on each road section. A score of 1 means it has an average annual daily traffic value of less than 50 and a road with greater than a 1000 vehicles per day would have a score of 5.

Figure 1 suggests that combining the probability of failure rating with the performance standard gives a level of service score and combining the probability of failure and consequence of failure value yields the risk score for each asset. These scores are established by simply adding the two scores together. Although these are just relative numbers, they may be used to define a level of service score or risk score for each road section. The individual scores or the average scores can be monitored and tracked over time for future comparison purposes. With this Asset

Management Plan, some suggested target values for different types of roads and other asset types have been provided.

According to the figure, the priority score for each asset is the combined level of service score and the risk score. The theoretical priority score should only be used as a guide to help prioritize improvement work to the assets, when all the needed works cannot be carried out. As explained in the road and bridge needs studies, there are other factors that should be taken in account when prioritizing asset improvements. Factors including preventative maintenance activities, scheduling tasks to coincide with integrated assets within the same area, financial and timing restraints and other activities taking place within the locale must be considered by staff. It is impossible to take into account all these other factors in a simplified scoring system. For this reason, the calculated theoretical priority score for the individual assets should only be used as a guide and the best sequence for improvements should be established by the Township staff responsible for those asset types. This priority score is not discussed further in this report as prioritizing the individual asset needs is beyond the score of this plan.

Note, it is important to realize that according to this scoring system, it is desirable to minimize the risk score and minimize the level of service score. In other words, an asset with a low level of service score is in good condition and is able to perform as desired.

This process is also used for the Facilities as well, though the Condition Rating/Probability of Failure scale has been adjusted to be 1-10.

Also, while this process could also be used for the Fleet, it was felt that it would make the evaluation of these assets unnecessarily complicated. For Fleet assets, only a condition rating was used to assess the status of these assets. The condition rating for the fleet is based on age and the condition rating for the facilities is based on the needs to rehabilitate the facility relative to its replacement cost.

4.0 PROPOSED LEVELS OF SERVICE

The proposed levels of service outlined below for the various asset groups are statements of the target that the Township intends to provide to users of the Township's assets in order to support the Township's goals in a cost-efficient manner. These targets are not intended to be binding or unalterable as it is understood that the target levels of service may need to be adjusted as circumstances change in order to deliver a more reasonable and efficient asset system.

To measure the applicable condition rating, levels of service and risk scores, each asset group has defined performance indicators which, going forward, will be used to monitor an asset group's performance over a set period of time. The Preventative Maintenance targets will be evaluated as a judgment call by Township staff. It is anticipated that every 5 years the condition ratings and other scores will be updated. These performance indicators are meant to be a simple measurable guide of whether Township asset decisions are having the desired effect on the overall asset inventory. Trends indicating that the performance is not matching the targets can then be examined in more detail to assess possible causes for the deviation.

Where applicable, the proposed levels of service will include meeting all regulatory requirements for safety, inspection schedules and maintenance. Where assets do not currently meet requirements due to original design; appropriate signage, or possibly appropriate barricades, should be placed until replacement occurs.

The data collected with the bridge and road study and information gathered pertaining to watermains, and the facility and fleet review by Township staff were assembled and reviewed to develop proposed level of service targets and evaluate how the assets within the Township compare with the proposed scores and ratings shown in Table 7. The targets are presented here and the current performance level scores and letter grade for all assets are as shown in Section 7.

Table 7 – Proposed Level of Service Performance Levels

Asset Type	Condition Rating	Level of Service Score	Risk Score	Financial Sustainability Score
Bridge	Average BCI > 60 & Less than 15% with BCI below 40	Average LOS < 5 & Less than 15% above 6	Average Risk < 5 & Less than 15% above 6	Anticipated Costs = or < Available Budget
Roads Gravel	Average CR > 6 & Less than 25% below 5	Average LOS < 5 & Less than 15% above 6	Average Risk < 5 & Less than 15% above 6	Anticipated Costs = or < Available Budget
Roads Surface Treatment	Average CR > 6 & Less than 25% below 6	Average LOS < 5 & Less than 15% above 6	Average Risk < 5 & Less than 15% above 6	Anticipated Costs = or < Available Budget
Roads Asphalt	Average CR > 7 & Less than 25% below 7	Average LOS < 5 & Less than 15% above 6	Average Risk < 5 & Less than 15% above 6	Anticipated Costs = or < Available Budget
Watermains	Average CR <= 3 & Less than 25% above 4	Average LOS < 5 & Less than 15% above 6	Average Risk < 5 & Less than 15% above 6	Anticipated Costs = or < Available Budget
Facilities	Average FCI > 90 & 0% with FCI under 70	Average LOS < 6 & Less than 10% above 6.5	Average Risk < 6.5 & Less than 20% above 7.0	Anticipated Costs = or < Available Budget
Fleet	Average CR > 5 & Less than 10% with CR <= 1	N/A	N/A	Anticipated Costs = or < Available Budget

Definitions:

- BCI, Bridge Condition Index as defined by the Ontario Structural Inspection Manual. Score ranges from 0 to 100, a higher score implies a better condition.
- Road Condition Score as defined in the Ministry of Transportation's Method and Inventory Manual for Small Lower Tier Municipalities. Score ranges from 0 to 10, a higher score implies a better condition.
- Road scores are all weighted based on the length of the road section when calculating averages.
- Watermain Condition Score is based on the number of recorded breaks per pipe length and the age of the pipe.
- Watermain scores are all weighted based on the length of the watermain section when calculating averages.

- FCI is the Facility Condition Index. Score ranges from 0 to 100 and is based on the relation between the anticipated 5-year rehabilitation needs and the replacement cost of the building. A score of 100 implies the facility is in good condition and there are no needs while a score of 70 implies that the rehabilitation costs are equal to thirty percent of the replacement costs.
- LOS is Level of Service score as defined and described in Section 2 of this report, a lower score implies a higher level of service, Score ranges from 2 to 10 (except for Facilities where this is extended to 15).
- Risk Score as defined and described in Section 2 of this report, a higher score implies a higher risk. Score ranges from 2 to 10 (except for Facilities where this is extended to 15).
- The evaluation of the financial sustainability is a score out of 10 as outline in Appendix F where 10 implies good financial sustainability.
- Fleet condition rating ranges from 0 to 10. A score of 10 implies the vehicle is new and has its entire useful life remaining. A score of 5 implies the vehicle has used up half of its expected useful life.

External factors such as changes to existing and new legislation requirements, and environmental changes may also have an impact on level of service targets. Adjustments should be made to the level of service performance targets, as required, in future revisions of the plan if external factors dictate or there is a desire to improve or an acceptance a decrease to one or more target levels.

The level of service was generally presented in the 2016 Asset Management report and was reviewed again while creating this report. By reviewing the performance of the assets over two time periods, this helps to determine if the township will be able to achieve the level of service proposed.

5.0 ASSET MANAGEMENT STRATEGY

The asset management strategy and backup information for each asset group is outlined in Appendices A through G. The Township strategy for all asset groups includes a preventative maintenance program that enables planned reaction to minor repairs rather than a delayed reaction resulting in a more significant repair and a higher cost. Integration of asset repairs over the various assets is also included in the strategies for the different asset groups, this will reduce duplication of effort at the same geographic location for the different groups. Complete elimination or duplication may not be possible in all cases, such as in the case of emergency repairs.

Disposal of assets will generally take place as part of a rehabilitation or replacement project. Costs for this aspect of the project will be included in cost projections for the work. Where disposal of the asset involves the sale of the asset to a third party or the exchange of assets with an upper tier of government, the asset will be removed from the Township inventory. The change will be noted wherever the removal of the asset may cause confusion in the asset management report (i.e. in comparison tables or graphs which may be affected by the assets removal).

Asset repair or rehabilitation projects will be fulfilled in accordance with the Township procurement policy as outlined in Bylaw 2016-29. Completion of a repair or rehabilitation of an asset with a high priority score will generally have the desired effect of decreasing the level of service score and reducing the risk score; however, sometimes there are other factors that should

be used to help prioritize the asset improvement schedule within the Township. When there are recommendations within the asset inventory studies, the Township staff will review those recommendations, other needs of the Township and budget restraints, to establish the priorities of the Township. Should the performance of one asset type appear to be falling further behind the targeted level of service, Township staff will consider applying more funds towards addressing the needs of that asset type. This will be discussed further in section 7.

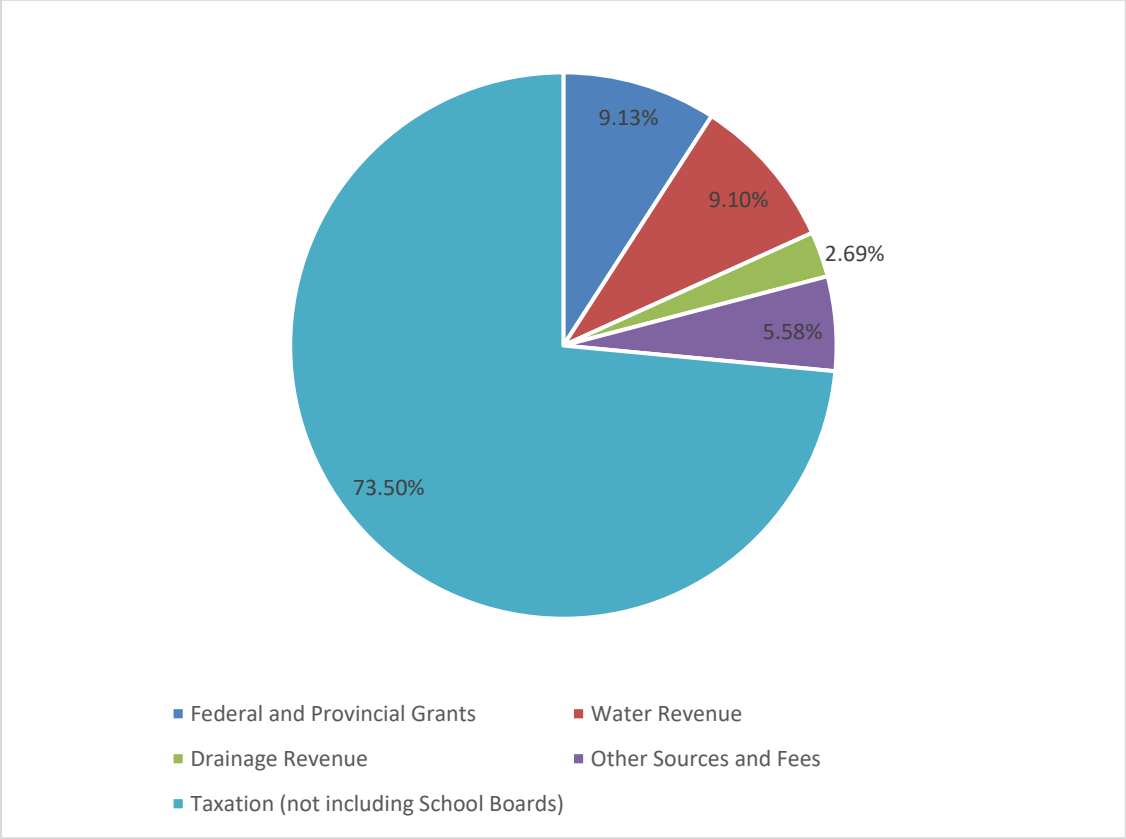
The asset group strategies will be re-evaluated on the same 5-year cycle as the Asset Management Plan or sooner if one asset strategy is found to require significant adjustment. Efficacy of the strategy will be measured by the comparison of future performance target scores to the scores calculated for past versions of the report.

6.0 FINANCING STRATEGY

Financial information, used in this section, was extracted from the Township's 2025 budget and the 2022 Year End Financial reports. Given there remains to be numerous unknown factors, the financial projections are considered to be only rough estimates of the available funds to address the capital needs. Through discussion with Township staff, it is their opinion the numbers presented are typical and suitable for use in this plan.

Figure 2 shows the Township's sources of revenue in 2022. The funds included in the miscellaneous revenue includes such things as the user fees, licenses, permits, and other all other revenues. The Federal and Provincial Grant amounts listed in this figure includes asset specific grants such as the Gas Tax Rebate. In 2022 the Township collected about $4.41M in property taxes which includes the amount used for operations, but not the amount transferred directly to the County and School Boards.

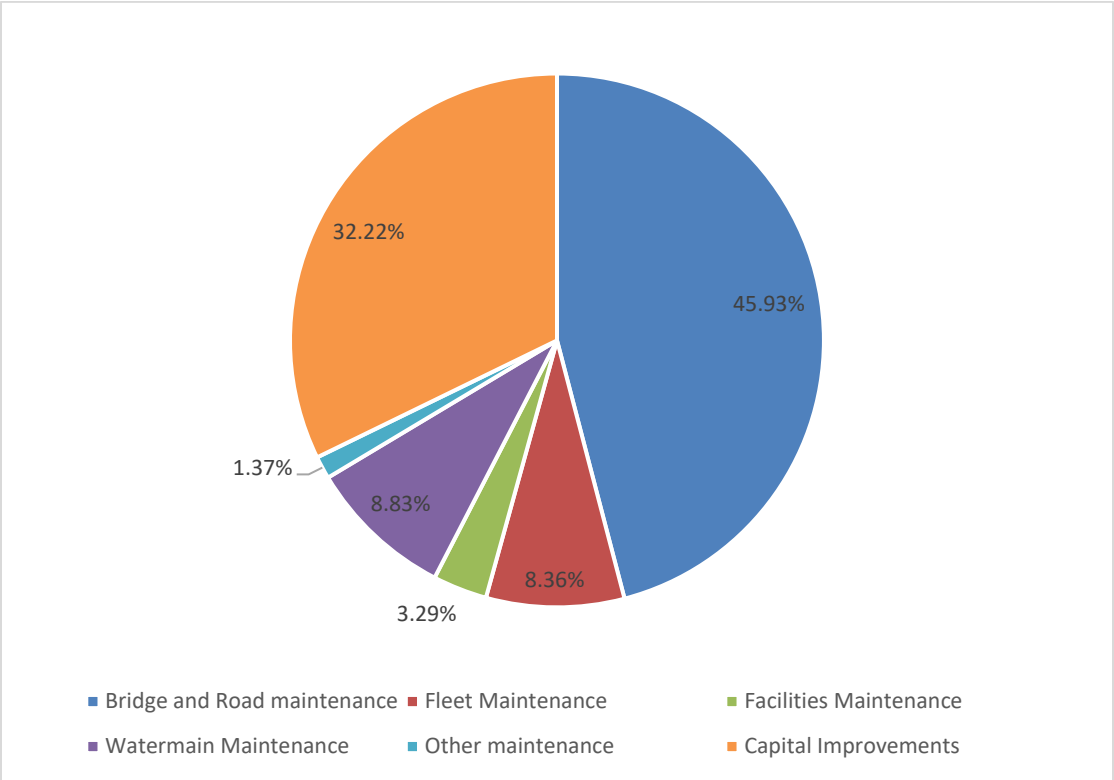
Figure 2 – 2022 Distribution of Revenue Sources



Federal and Provincial Grants	$547,461	9.13%
Water Revenue	$545,588	9.10%
Drainage Revenue	$161,246	2.69%
Other Sources and Fees	$334,774	5.58%
Taxation (not including School Boards)	$4,407,638	73.50%
Total	$5,996,707	

An illustration of how the Township expenses were distributed in 2025 is shown in Figure 3. Note, the values presented in Figure 3 only include the operational and capital improvement expenses, not administrative overhead costs.

Figure 3 – 2025 Distribution of Operating Expenses



Bridge and Road maintenance	$1,675,000	45.93%
Fleet Maintenance	$305,000	8.36%
Facilities Maintenance	$120,000	3.29%
Watermain Maintenance	$322,000	8.83%
Other maintenance	$50,000	1.37%
Capital Improvements	$1,175,000	32.22%

The financial records from the Township were also reviewed to determine how much money is available for capital improvements in the reserves and the total number of assets owned by the Township. In 2025 there was $4,265,000 available for capital improvements in reserves.

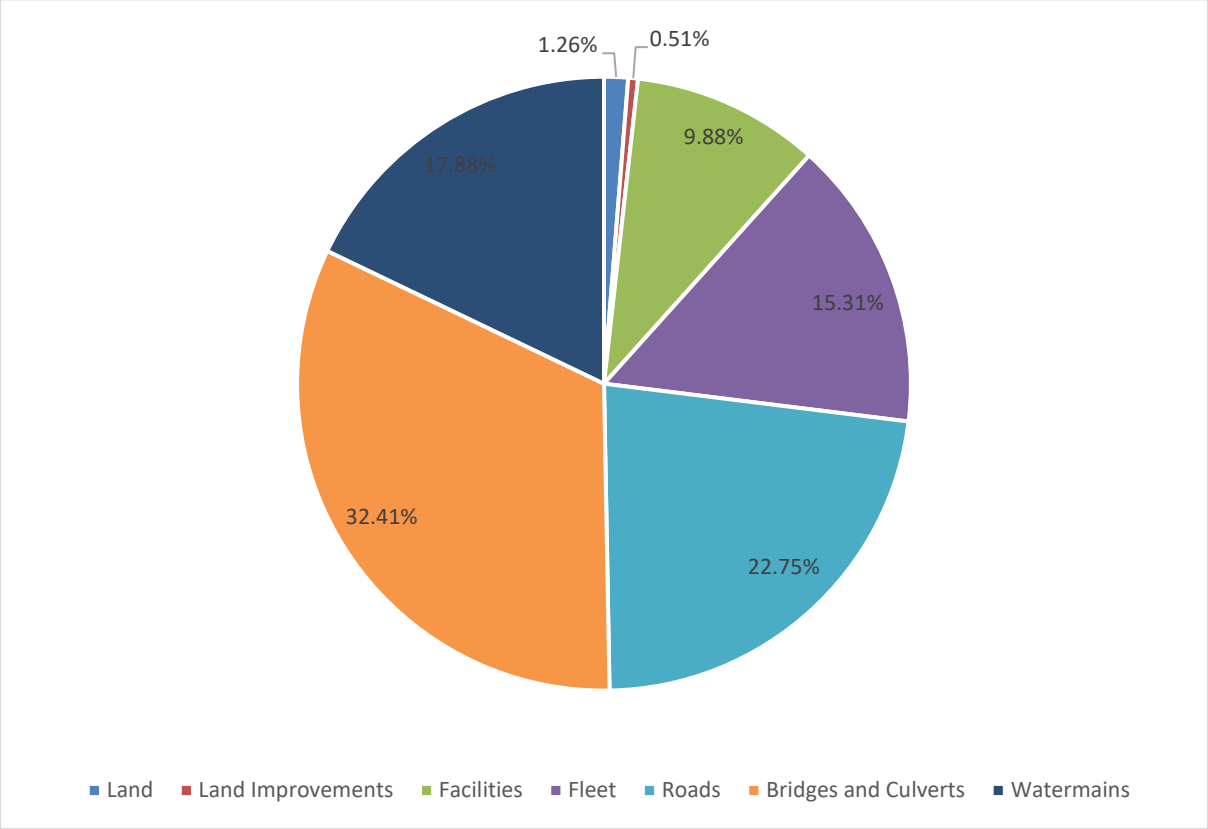
The original book value of the Roads and Bridges equal 22% and 32%, respectively, of the assets owned by the Township that are maintained (funded) with property tax revenues. To determine the funds available for capital improvements of the roads and bridges, it was assumed that these same percentages (22% and 32%) of the money available for capital improvements would be used for the roads and bridges, respectively. Based on these assumptions, the amount of money from tax revenues available for capital improvements is presented in Figure 4.

The Township has several reserves for the renewal of Roads, Bridges and Fleet and Equipment (F&E). The projected 2025 balances for these reserves are:

- Public Works/Roads F&E - $1,061,000,
- Fire F&E - $260,000,
- Watermain System renewals - $1,091,000,
- Public Works/Roads capital – $757,000,
- Winter control capital - $219,000
- Working capital reserve of $545,000.

The 2025 Budget included funding from taxation to the Roads Fleet Reserve of $110,000 and $80,000 to the Fire Fleet Capital Reserve. These funding levels are projected to continue throughout the forecast period.

Figure 4 – 2025 Assumed Distribution of Capital Budget



A summary of the typical annual maintenance and capital budget for the roads and bridges is presented in Table 8. The table also shows that the anticipated Gas Tax Rebate, which must be spent on capital improvements of the roads and bridges, is $63,000. To calculate the total amount of capital funds available, it was split up proportionally to the book value of each asset type and added to the taxation revenue available for capital improvements.

Table 8 – Typical Annual Operating and Available Capital Budget for the Asset Categories

Asset Group	Annual Operating Budget	Annual Taxation Revenue for Capital	Annual Gas Tax Rebate	Annual Capital Funds Available
Bridges	$130,000	$380,772		$380,772
Roads	$1,632,000	$204,279	$63,000	$267,279
Fleet	$758,000	$179,925		$179,925
Facilities	$357,000	$116,082		$116,082
Water System	$322,000	$210,106		$210,106
Sewers	$0	$0		$0
Storm Water System	$448,000	$0		$0

Table 9 summarizes the replacement costs and the anticipated annual capital improvement costs for the asset groups listed. Note, based on our estimates, the replacement costs for many of these assets increased more than the inflation rate. The replacement costs calculated were based on 2025 dollars and include probable design and construction costs. Typically, the replacement costs are based on a replacement the same size as the existing asset, but we have assumed it would be replaced in conformance with the current standards. For example, with a bridge, we have assumed the new bridge would be constructed up to current structural standards, but it would be the same size as the existing. With the road replacement costs, it has been assumed the road would be reconstructed to the current municipal road section for that class of road.

Table 9 – Annual Capital Replacement Cost and Budget Summary

Asset Group	2025 Replacement Cost [1]	2022 TCA Amortization [2]	Anticipated Average Annual Expenditure [3]	Anticipated Average Annual Available Capital Budget [4]	Annual Surplus (Shortfall)
Bridges	$54.3M	$131,775	$915,800	$380,772	($535,028)
Roads	$237.6M	$11,410	$380,400	$267,279	($113,121)
Facilities	$11.5M	$55,003	$35,000	$116,082	$81,082
Fleet	$5.8M	$148,680	$493,000	$179,925	($313,075)
Watermains	$35.2M	$125,345	$146,750	$210,106	$63,356
Sewers	$0	N/A	$0	$0	$0
Stormwater systems	$0	N/A	$0	$0	$0
Total	$344.4M	$472,213	$2,039,050	$1,154,164	($816,786)

[1] The replacement cost estimate assumes components are generally reconstructed as per municipal standard road sections and current bridge code standards. The actual bridge replacement value will be slightly higher when additional boundary bridges are included.
[2] The amortization charges of the Tangible Capital Asset book values were taken from the 2025 municipal budget.
[3] The anticipated average annual expenditure for bridges is based on the projected required work for the next 40 years, and does not consider additional boundary bridge work on the road sections not managed by the Township.

For the roads, it was based on the average projected needs over the next 10 years. All roads were reviewed, and this capital estimate includes the Dawn-Euphemia portion of recommended work on Aberfeldy Line where, Dawn-Euphemia is not the lead, under the boundary road agreement. This work may not go ahead with the recommended timing or cost. For watermain, it was based on setting aside money each year to fund 75% of the future watermain replacement cost.

[4] The anticipated annual average capital budget available was calculated using the 2025 budget figures and the assumptions presented earlier.

The Anticipated Average Annual Expenditure listed in Table 9 comes from the road and bridge studies and from discussions with Township staff for the other assets. The anticipated cost for the roads was generated using condition ratings, anticipated deterioration rates and probable cost estimates for the assumed type of improvement work required. The cost provided for the bridges came from the bridge needs study but also takes into consideration costs more than 10 years into the future that were generated using the assumed service life for the asset indicated in Appendix A and Appendix B. Maintenance work on the assets is required to ensure the asset is able to achieve its anticipated life expectancy. Should the capital budget for 2025 be different than the recommended average annual expenditure, it may be necessary to adjust the budget in future years, use money from reserves or rely on using grant money to address the needs and maintain the assets at the proposed level of Service Targets.

Table 9 shows that there is currently a calculated funding **deficit of $816,786** per year over the next ten years. As the total tax revenue is approximately $4.4M, a tax increase of approximately 19% above inflation would be needed to avoid the deficit if no other strategies are employed. It is recommended this increase be phased in over 5 years to minimize the impact on the tax base.

In September 2012, the Federation of Canadian Municipalities released the first *Canadian Infrastructure Report Card*. The *Canadian Infrastructure Report Card* does not distinguish between roads and bridges and does not include utilities. It identified that the cost to replace all road sections in Canada that are in fair to very poor condition is $7,325 per household in Canada. In comparison, the Township of Dawn-Euphemia road and bridge infrastructure costs to complete the anticipated work for the next 10 years is $17,810 (or $1,781 per year) per tax paying household based on 766 tax paying households in the Township. When calculating the replacement costs, it became apparent that construction costs have more than doubled over the last 12 years; therefore, we are of the opinion that the cost calculated for the Township are comparable to those from the 2012 study after adjusting for actual construction inflation.

The construction of the vast majority of the Township's hardtop roads, watermains, bridges, graders, and facilities was funded by significant contributions from the historical grant programs of the Provincial and Federal governments. Those grant programs provided in general 75% to 90% funding of the total costs. It would be fair to say that these assets would not have been acquired without those historical funding levels. The Township's experience is similar to most of the small rural municipalities in Ontario.

The Township principally uses a pay-as-you go system to finance capital and maintenance expenditures. They have also taken advantage of grants to help complete larger capital improvement projects. This has historically allowed the Township to complete asset replacements and improvements when necessary; however, as the number of grants appears to be decreasing, the service level expectations are increasing and assets age, this may become more challenging. The Township plans to continue this strategy into the future for standard capital and maintenance work.

Occasionally the cost for large projects may exceed the capacity of the pay-as-you go strategy. The following strategies are occasionally used by municipalities when they require additional funding:

- applying for grants
- obtaining a loan
- issuing long term bonds
- setting up a public private partnership
- implement a user pay system to help fund the project

It is difficult for the Township of Dawn-Euphemia to implement some of these options given its size and the type of capital improvements typically required. The Township will continue applying for grants when they become available and, if necessary, use money from reserves or debt financing to address emergencies. If the opportunity presents itself, and it is in the Township's best interest, the Township would consider a public-private partnership or implement a user pay system. It is not expected to be cost effective for the Township to issue bonds.

For emergency repairs, it was explained that the Township will use reserves or debt financing to complete the repairs, where warranted, and adjust their following capital budgets as required to cover this repair. The Township has set a new debt financing target of a maximum of **5 %** of capital budgets in any 5-year period. This amount will be checked on a yearly basis to ensure that the Township continues to comply with the debt and financial obligation limit of a municipality outlined in the *Municipal Act, Ontario Reg. 799/94 as amended by O. Reg. 403/02 – Debt and Financial Obligation Limits.* If this target would cause the Township to exceed the amount allowed by the regulation it shall be adjusted downward.

For special projects, which lend themselves to public-private partnerships, the Township will entertain prospective partners to complete the work. However, this option is not expected to be practical for most infrastructure assets currently owned, or expected to be owned by the Township in the near future.

7.0 FUTURE CHANGES IN POPULATION AND ECONOMIC ACTIVITY

Population is expected to grow at similar levels to the past decade. In 2016 the population was 1,782, in 2024 the population has grown to 1,967. Growth at 20 people per year.

Economic activity is not expected to change as Dawn-Euphemia is predominantly stable as an agricultural area with one other significant industrial asset – Gas Storage at the Enbridge Dawn site.

8.0 SUMMARY

The Tables in this section summarize the current state of the infrastructure and financial budgets of the Township in comparison to the Targets presented in Section 4.0. The table has been colour-coded to illustrate how well the asset groups are meeting their performance targets. Green implies the asset is meeting or exceeding that target, yellow implies it is close to meeting that target and red implies it is not achieving that target. As shown in Table 10, the Township is generally satisfying or is close to satisfying the level of service targets. The areas where the Township is behind pertains to funding of the bridge and fleet infrastructure needs.

Table 10 – 2025 Infrastructure Report Card

Asset Type	Condition Rating	Level of Service Score	Risk Score	Financial Sustainability Score	Asset Letter Grade
Bridge	Average BCI = 74.8	Average LOS = 3.4	Average Risk = 4.0	42%	D
	1.9% with BCI below 40	0.9% above 6	1.9% above 6		
Roads Gravel	Average CR = 7.6	Average LOS = 3.6	Average Risk = 4.0	70%	C+
	6.0% with CR below 5	0% above 6	1.9% above 6		
Roads Surface Treatment	Average CR = 7.4	Average LOS = 3.7	Average Risk = 5.3		C
	23.8% with CR below 6	0% above 6	16.7% above 6		
Roads Asphalt	Average CR = 8.4	Average LOS = 3.3	Average Risk = 4.6		C+
	4.7% with CR below 7	0% above 6	16.7% above 6		
Watermains	Average CR = 1.2	Average LOS = 2.0	Average Risk = 3.1	100%	A
	0% with CR below 4	0% above 6	0% above 6		
Facilities	Average FCI = 97.6	Average LOS = 5.1	Average Risk = 5.5	100%	B+
	0% with FCI under 70	16.5% above 6.5	0% above 7		
Fleet	Average CR = 3.9	N/A	N/A	36%	E
	27.3% with CR below 1				

Note: 1. Refer to Table 6 for definitions of targets and scoring system.
2. When reviewing the Level of Service, and the Risk Score, a value out of 10 is applied with a lower score implying the average score for that asset is in relatively good condition and a high score implying it is in poor condition or it represents a higher risk.
3. The Asset Letter Grade is a number out of 100 calculated and converted to a letter grade as outlined in Appendix G.

9.0 FUTURE LEVEL OF SERVICE

A projection of the levels of service being provided for the core assets in 10 years were prepared assuming that the proposed capital improvements, presented in the Appendices of this report, are address within the indicated time periods. An explanation of how the projections were made and the results follow.

The average condition rating of the gravel roads is currently 7.6 and the asphalt is 8.2. With the gravel roads, the condition ratings will not change over the next 10 years time because they are being maintained with a resurfacing of new granular resurfacing every two years. The cost to do this work is incorporated into the maintenance budget. To calculate the future condition ratings of the asphalt roads, we have assumed that they will continue to deteriorate at the rates used within the road needs study. However, when a road section is rehabilitated, as per the proposed road rehabilitation schedule, its condition rating will return to 10. Over the next 10 years it was calculated that the average condition rating would vary from 7.6 to a low of 7.4 over that time period. These condition ratings still satisfy the level of service targets.

With the bridges, currently there are no structures with load limits and no structures with dimensional restrictions and the average BCI is 74.8. Numerous structure replacement projects are proposed over the next 10 years to address the capital improvements recommended. These improvements are intended to help ensure the bridge structures will not be required to have load limits imposed. With regards to the future average BCI scores, the BCI scores for the rehabilitated structures will improve and the BCI of the other structures will continue to slowly deteriorate. The proposed rehabilitation work over the next 10 years represents about 10% of the replacement cost for the bridge assets and since the average life expectancy of the bridges is about 100 year it is anticipated that the future average BCI score will be similar to the existing average in 10 years.

With the watermains, there are no capital improvements proposed over the next 10 years because the watermains are not yet close to the end of their life expectancy. With regards to the level of service parameters, it is anticipated that the frequency of water main breaks and need for boil water advisories notices will not change significantly over the next 10 years. Therefore, the level of service provided is not expected to change.

With regards to storm water collection systems, the Township does not own any. The storm water collections systems within the Township are municipal drains and the property owners serviced by the drains are responsible for the costs to maintain them.

The Township of Dawn-Euphemia also has a history of providing acceptable levels of service for their core assets. When Table 10 of the current report is compared to Table 10 in the 2016 Asset Management Plan, an improvement from 5 yellow and 3 red ratings to 4 yellow and 1 red. Therefore, it is expected that this will continue into the future.

10.0 CONCLUSION

The Asset Management Plan, as presented in this report, outlines the strategies that will be employed to meet the proposed level of service targets for the different asset groups in a cost-effective manner. The proposed level of service targets are set to meet the principal Township goal of maintaining the targets as defined in the plan. These include factors such as level of service provided, level of risk, condition and financial target.

The asset groups included in this report are roads, bridges, watermains, sewers, stormwater drains, facilities and fleet. The initial asset inventories for the asset groups were completed in 2013 and 2015, then updated for this 2025 report as mentioned in the date Table 1. Bridges are scheduled to be reviewed every 2 years as per the provincial regulations, all other asset groups will be formally reviewed on a 5-year cycle, and informally reviewed during regular maintenance activities. The Asset Management Plan will be updated about every 5 years and will include a review of the proposed level of service targets and whether they are still supporting the goals of the Township or whether they require adjustment.

In Table 11, each asset group in the Township has been assigned an overall letter grade, going forward this grade will be referenced in future reports. A comparison to the 2016 values helps to determine whether the strategies are having a positive effect on the Township's assets or if more resources need to be allocated to a particular asset type. As it can be seen, progress overall has improved.

Overall grades that take into account the condition ratings, level of services scores, risk scores and financial sustainability scores for the evaluated asset group were calculated as per the procedure and targets outline in the plan.

Table 11 – 2025 Infrastructure Letter Grades

Asset Type	Current Asset Letter Grade	2016 Asset Letter Grade
Bridge	D	B-
Gravel Road	C+	D
Surface Treated Roads	C	E
Asphalt Roads	C+	D
Watermains	A	D
Facilities	B+	A+
Fleet	E	E

The scores in the above summary table suggests that the level of service and/or financing being provided for the roads, bridges and fleet are less than the Township's target levels. The tables within the report show that roads are slightly underfunded while the bridges are being significantly underfunded. To address the issue additional funds should be directed toward this asset type to improve the rating unless an alternative strategy to address the deficiency can be identified. Fleet is also underfunded but the reserves set aside to this point and the ongoing reserve additions should address the issue for the next 3-5 years.

Strategies are outlined for the rehabilitation and repair for each asset group along with the expected cost per year for the next 10 years. Based on the costs presented in the 2025 budget and the anticipated grant funds, it is estimated the Township can apply $1,154,000 towards capital renewals and capital maintenance. This represents about 15% of their operating budget. It is estimated that the Township will encounter an annual financial shortfall of $817,000 to address the projected capital improvement needs of the assets analyzed in this plan. To address this shortfall, the Township will either have to find cost savings, obtain grant funding or implement a tax increase. If no savings or additional grants are found, it is calculated that the Township would have to increase the taxation revenues by about 15% above inflation over the next five years to match the anticipated annual capital improvement needs and avoid deviating from the target service levels.

A recommendation is that Dawn-Euphemia add the boundary bridges, located on road sections where you are not the lead for maintenance and repairs, to the asset registry and that future asset management plans document capital needs and replacement costs for those structures. It is further recommended that Dawn-Euphemia share any 10 year capital works planned on boundary roads or bridges with the neighbouring municipality. At the same time, a request from those municipalities for their 10 year capital works planned on boundary roads and bridges can be made to create a more comprehensive Asset Management Plan.

All of which is respectfully submitted for your approval.

B. M. ROSS AND ASSOCIATES LIMITED

Per _____
Ken D. Logtenberg, P. Eng

Per _____
Rick Steele, GISP

:hv

APPENDIX A

BRIDGES

Asset:	Bridges
Asset Goal:	Maintain bridges in accordance with the rehabilitation and replacement criteria and the target level of service in a cost effective manner while satisfying legislative requirements.
Inventory:	108 Structures: 14 Bridges, 94 Culverts (over 3.0m in span). Additional boundary bridges need to be documented.
Anticipated Asset Life Cycle:	Bridges are composed of three broad element categories: Sub-Structure: consists of footings, wingwalls and abutments Super-Structure: consists of the deck and its main structural elements, as well as barrier walls Wearing Surface: consists of asphalt and waterproofing, gravel or exposed concrete Broadly a bridge or concrete culvert in the Township of Howick may be assumed to have a service life of 80 years, prior to requiring replacement. A substantial rehabilitation would be expected to occur approximately every 30 years. An asphalt wearing surface consisting of two lifts of asphalt would be expected to have a life expectancy of 20 years. A corrugated steel pipe culvert may be assumed to have a service life of 50 years. Actual life of a bridge asset will depend on the severity of the environment in which it operates, level of use, and maintenance and rehabilitation activities performed throughout its life cycle.
Integration:	May be integrated with work on the adjacent road sections, not typically integrated with other infrastructure in the Township.
Rehabilitation and Replacement Criteria:	Criteria for prioritizing include safety, level of service, probability of failure and consequence of failure. Biennial visual inspections of the bridges are completed which include recommendations on work required to maintain, rehabilitate or repair the asset from the review Engineer. An overall Bridge Condition Index (BCI), a bridge condition rating between 0 and 100, is provided for each bridge. The BCI is a summary of the condition ratings given to all elements of the bridge. A BCI equal to 0 requires immediate removal from service and equal to 100 is a new structure with no observed defects. In practice no structure should reach a BCI of 0 as rehabilitation work or bridge replacement should be performed prior to all structural elements being rated as poor. Generally structures with an inadequate level of service will not have major rehabilitation work performed with a view to replacement at the end of its service life. Regular maintenance activities for these structures will be performed instead and may be more involved than regular maintenance activities performed for other structures. Where the level of service is substantially lower than required, an individual structure will be assessed in more detail and the Township may decide to schedule replacement earlier than merited by the priority score.
Rehabilitation and Replacement Strategy:	Work needs identified during the biennial bridge inspections will be assigned a priority score based on the level of service, probability of failure and consequence of failure associated with each structure. Work identified will be scheduled and adjusted, as required, to fit within the Township's annual budget and meet the Township's goals. Safety concerns identified during the bi-annual bridge inspections by the Engineer, irrespective of the priority score, will be addressed in a timely manner, proportional to the associated risk. Cost effective preventative maintenance strategies will be implemented where practical. With bridges this may include waterproofing and paving exposed bridge decks on paved roads, placing rip rap where undesirable erosion is taking place, or providing protective coatings on corrosion sensitive components. For long-term planning the Township has assumed that bridges and concrete culverts will require a major rehabilitation at approximately 40 years of age, and replacement at 80 years of age. Corrugated Steel Pipe (CSP) culverts the Township will assume that replacement will be require in 50 years with ongoing, periodic maintenance.
Risks Associated with not Implementing Strategy:	Bridges may not be able to accommodate standard traffic loads and load limits may need to be imposed. Asset users may have to follow an alternative route to avoid bridges with load limits or those not providing acceptable levels of service. Costs to maintain the bridges may increase if the work is not completed in a timely manner.

Integrated Asset Priorities:	Integrated with adjacent road work when applicable.
Related Reports on Asset Type:	2021 Bridge Inspection Report - dated January 19, 2022 and 2023 Bridge Inspection Letter dated November 29, 2023, both completed by B.M. Ross and Associates Ltd.
Estimated Cost per year for Strategy Described:	$915,800/year for capital costs for the next 40 years (for boundary bridges, this estimate has already been reduced by 50%)) $4,200/year for the next 5 years for maintenance costs Costs are to be adjusted, as required in future reports
Review Schedule and Procedure:	Bridge assets are to be reviewed on a biennial bases under the supervision of a Professional Engineer, in accordance with mandated Provincial requirements to the standards of the Ontario Structural Inspection Manual. Bridges were last reviewed in 2023, therefore future reviews should take place in odd-numbered years. A Bridge Condition Index (BCI) score will be calculated for each structure every five years when an updated bridge needs study and asset management plan is completed.
Other Information or reference materials:	

Proposed Bridge Needs – 1-5 Year

Site Number	Location	Repair Description	Probable Cost	BCI	Priority
33	Kent Line	Install steel beam guiderail	$ 30,000	82	6
93	Bentpath Line	Patch repair culvert	$ 150,000	52	12
94	McCready Road	Replace curbs, install guiderail, patch repair culvert	$ 103,000	57	7
69	Fansher Road	Replacement	$ 570,000	37	11
80	Smith Falls Road	Replace railings, replace curbs, soffit and deck repairs	$ 158,000	64	7
86	Dobbyn Road	Repair retaining wall	$ 52,000	67	7
31	Dawn Valley Road	Curb patch repairs, install guiderail	$ 71,000	60	8
89	Burr Road	Replacement	$ 105,600	54	9
		Total	**$ 1,239,600**		

Proposed Bridge Needs – 6-10 Year

Site Number	Location	Repair Description	Probable Cost	BCI	Priority
19	Dawn Valley Road / Langbank Line	Soffit repairs, install guiderail	$ 80,000	60	8
29	Robinson Road	Replacement	$ 286,000	52	10
45	Huffs Corners Road	Replacement	$ 286,000	47	9
67	Davis Road	Replacement	$ 702,000	51	11
68	Kerry Road	Replacement	$ 702,000	55	7
72	Downie Road	Replacement	$ 416,000	54	9
74	Fansher Road	Replacement	$ 416,000	54	9
85	Dobbyn Road	Patch repair retaining wall	$ 35,000	71	5
95	Cameron Road	Replacement	$ 468,000	64	8
101	McCready Road	Replacement	$ 408,000	57	8
106	Cameron Road	Replacement	$ 553,000	57	8
26	Tramwary Road	Replacement	$ 211,200	57	8
		Total	**$ 4,563,200**		

Projected Cost of Work in (,000) over 40 Years.

Bridge Needs Errors

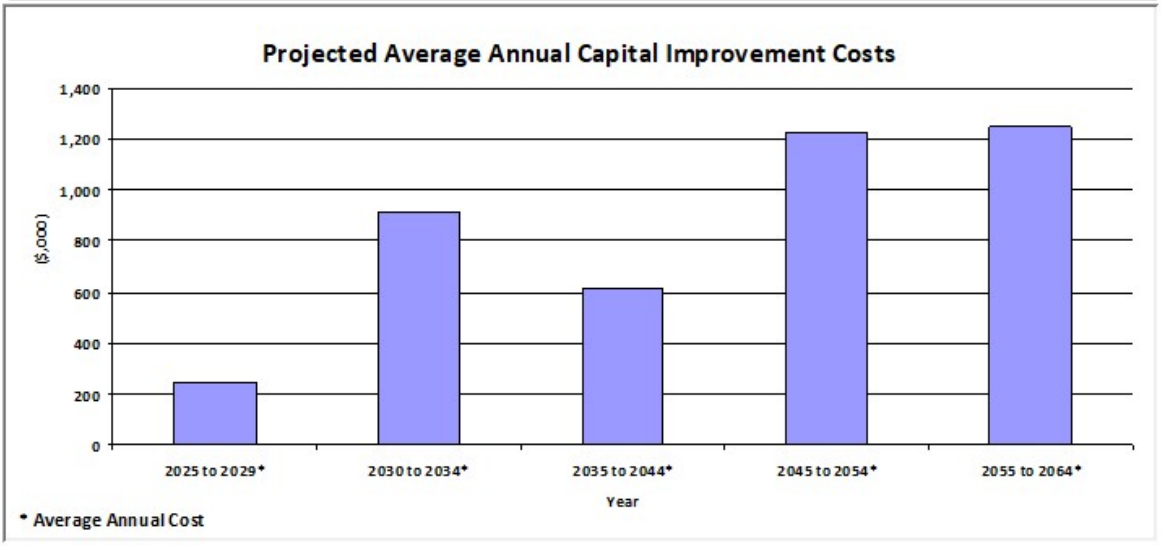
Proposed Timeframe	Bridge	Culvert	Totals	Average Annual
2025 to 2029*	$158.0	$1,081.6	$1,239.6	$247.9
2030 to 2034*	$0.0	$4,563.2	$4,563.2	$912.6
2035 to 2044*	$254.6	$5,891.9	$6,146.5	$614.7
2045 to 2054*	$9,211.0	$3,008.0	$12,219.0	$1,221.9
2055 to 2064*	$7,381.5	$5,080.2	$12,461.7	$1,246.2

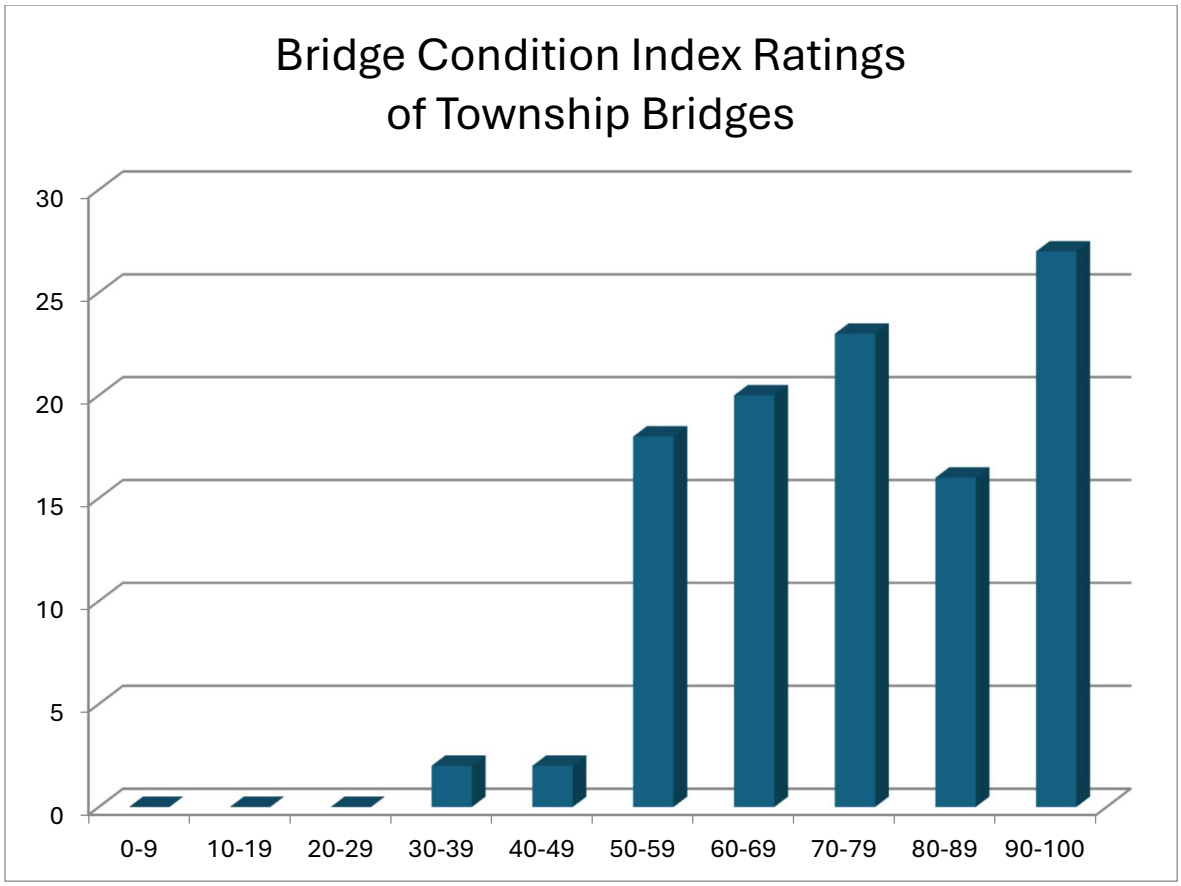
Projected Average Annual Cost Over 40 Years ($,000): 915.8

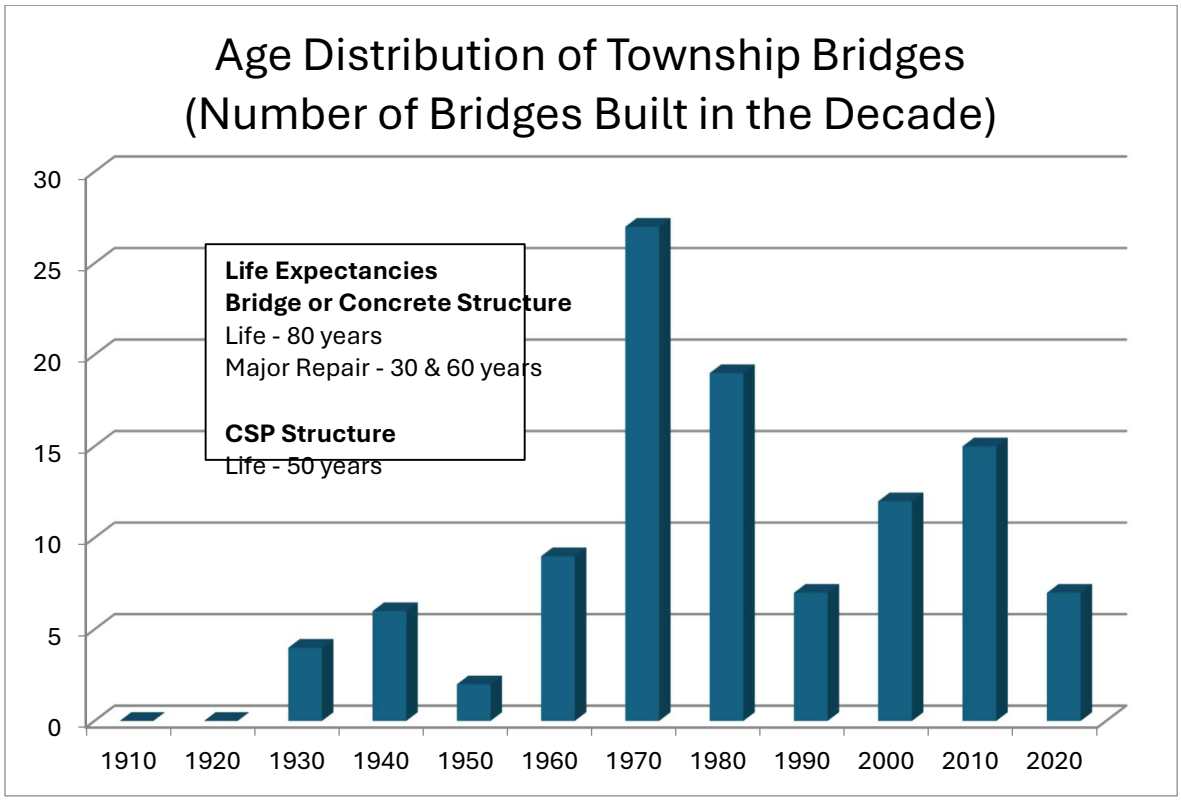
Total of all Recommended Maintenance ($,000): 21.0 Annually (Assuming 5 Year Period) in ($,000): 4.2

Average Score Summary:

Average BCI	Average Risk	Average Level of Service	Average Prority
74.8	4.2	2.4	6.6




Bridge Condition Index Ratings
of Township Bridges
30
25
20
15
10
5
0
0-9
10-19
20-29
30-39
40-49
50-59
60-69
70-79
80-89
90-100


Age Distribution of Township Bridges
(Number of Bridges Built in the Decade)
30
25
20
15
10
5
0
Life Expectancies
Bridge or Concrete Structure
Life - 80 years
Major Repair - 30 & 60 years
CSP Structure
Life - 50 years
1910
1920
1930
1940
1950
1960
1970
1980
1990
2000
2010
2020

Site Number	Road Name	Structure Type	Span (m)	BCI	Year Built	Last Rehab Date	Risk Rating	Level of Service Rating	Priority Score
1	Dawn Valley Road	Rectangular Culvert	4.25	68	1945		4	5	9
2	Cuthbert Road	Rectangular Culvert	7.5	73	1975		3	3	6
3	Cuthbert Road	Rectangular Culvert	***3.8***	100	2023		2	4	6
4	Robinson Road	Rectangular Culvert	3	93	1997		2	2	4
5	Robinson Road	Rectangular Culvert	6.1	81	2003		3	4	7
6	Marthaville Road	Rectangular Culvert	4.9	67	E-1990 W-1960		6	4	10
7	Marthaville Road	Rectangular Culvert	6	85	1975		4	2	6
8	Tramway Road	Rectangular Culvert	3.1	63	1940		5	5	10
9	Tramwary Road	Rectangular Culvert	5.5	68	1945		5	5	10
10	Esterville Road	Rectangular Culvert	3.5	55	1940		4	5	9
11	Esterville Road	Rectangular Culvert	3	80	2003		3	3	6
12	Pantry School Road	CSP Round Culvert	2.4	95	2017		3	2	5
13	Tramwary Road	Rectangular Culvert	3.6	64	1945		5	6	11
14	Tramwary Road	CSP Arch Culvert	3.2	98	2020		3	2	5
15	Marthaville Road	CSP Ellipse Culvert	2.6	60	2012		6	4	10
16	Robinson Road	Rectangular Culvert	5.8	86	1990		2	3	5
17	Cuthbert Road	Rectangular Culvert	6.1	84	2006		4	4	8
18	Dawn Valley Road	Rectangular Voided Slab	7.85	88	1975		2	2	4
19	Dawn Valley Road / Langbank Line	Rectangular Culvert	6.9	60	1960		5	4	9
20	Cuthbert Road	Rectangular Culvert	5.3	100	2021		3	2	5
21	Robinson Road	Rectangular Culvert	5.5	63	1975		5	4	9
22	Marthaville Road	Rectangular Culvert	5.2	85	2005		5	3	8
23	Tramway Road	Rectangular Culvert	3.8	36	1930		6	8	14
24	Edys Mill Line	Rectangular Culvert	3.05	72	1984		3	4	7
25	Tramwary Road	CSP Ellipse Culvert	2.6	63	1975		4	5	9
26	Tramwary Road	CSP Ellipse Culvert	3.1	57	1970		5	4	9
27	Lambton Line	Rectangular Culvert	2.4	90	2014		5	2	7
28	Lambton Line	Rectangular Culvert	2.5	72	1950	2016	6	3	9
29	Robinson Road	CSP Ellipse Culvert	2.6	52	1977		6	5	11
30	Lambton Line	Rectangular Culvert	2.5	98	2019		5	2	7
31	Dawn Valley Road	Rectangular Culvert	3.1	60	1970		5	5	10
32	Lambton Line	Rectangular Culvert	3.1	93	1995		5	2	7
33	Kent Line	Rectangular Culvert	6.1	82	1975		4	3	7
34	Dawn Valley Road	Rigid Frame, Vertical Legs	6.1	86	1995		3	2	5
35	Cuthbert Road	Rigid Frame, Vertical Legs	6.3	75	1985		3	3	6
36	Kent Line	CSP Ellipse Culvert	***3.8***	100	2022		3	2	5
37	Kent Line	Rectangular Culvert	3.1	86	2000		3	2	5
38	Esterville	Rectangular Culvert	3	92	1980		3	2	5
39	Lambton Line	Rectangular Culvert	6.1	97	2019		5	2	7
40	Pantry School Road	Solid Slab	6.5	61	1990		5	5	10
41	Pantry School Road	Rectangular Voided Slab	16.9	76	1979	2016	4	4	8
42	Gould Road	Rectangular Culvert	3	86	1998		2	2	4
43	Gould Road	Arch Culvert	11	84	2002		3	4	7
44	Huffs Corners Road	Arch Culvert	10.9	83	2001		3	4	7
45	Huffs Corners Road	CSP Ellipse Culvert	2.1	47	2006		5	6	11
46	Lambton Line	CSP Round Culvert	2.2	98	2013		5	2	7
47	Lambton Line	CSP Round Culvert	2	97	2014		5	2	7
48	Lambton Line	CSP Round Culvert	1.8	98	2012		5	2	7
49	Lambton Line	CSP Round Culvert	2	97	2014		5	2	7
50	Lambton Line	I-beam or Girders	15.4	86	1960	2012	5	2	7
51	Lambton Line	CSP Round Culvert	1.8	50	1975		8	5	13
52	Oakdale Rd	Rigid Frame, Vertical Legs	13.5	73	1981		4	3	7
53	Langbank Line	Rigid Frame, Vertical Legs	11	73	1989		4	3	7
54	Oakdale Road	T-Beam	10.9	71	1980	2013	4	3	7
55	Hale School Road	CSP Arch Culvert	2.23	87	2015		3	2	5
56	Hale School Road	Rectangular Culvert	6.3	78	1990		4	4	8
57	Aberfeldy Line	Rectangular Culvert	3	98	2005		3	2	5
58	Oakdale Road	CSP Ellipse Culvert	2.4	98	2014		2	2	4
59	Naylor Road	CSP Ellipse Culvert	***2.9***	100	2023		2	2	4
60	Naylor Road	Round Culvert	1.8	92	2009		3	2	5
61	McAsulan Road	Rectangular Culvert	3	74	1970		3	3	6
62	Florence Road	CSP Ellipse Culvert	3.7	63	1975		5	4	9
63	McCutcheon Road	CSP Round Culvert	1.78	50	1975		5	5	10

Site Number	Road Name	Structure Type	Span (m)	BCI	Year Built	Last Rehab Date	Risk Rating	Level of Service Rating	Priority Score
64	Lambton Line	Rigid Frame, Vertical Legs	16.8-18.3-16.8	72	1930	2017	6	3	9
65	Florence Road	Rigid Frame, Vertical Legs	9.1	70	1940	2016	6	3	9
66	Fansher Road	CSP Round Culvert	1.8	68	1980		4	4	8
67	Davis Road	CSP Round Culvert	4.8-4.8	51	1975		5	5	10
68	Kerry Road	CSP Ellipse Culvert	5.4-5.4	55	1970		4	4	8
69	Fansher Road	CSP Ellipse Culvert	5.2	37	1965		6	6	12
70	Annett Road	CSP Ellipse Culvert	5.1	75	1975		3	3	6
71	Annett Road	CSP Ellipse Culvert	***4.4***	100	2022		2	2	4
72	Downie Road	CSP Ellipse Culvert	4.7	54	1970		5	5	10
73	Downie Road	CSP Round Culvert	1.6	95	2015		2	2	4
74	Fansher Road	CSP Ellipse Culvert	5.5	54	1970		5	5	10
76	Downie Road	CSP Round Culvert	3-3	79	1980		3	3	6
77	Bilton Line	CSP Ellipse Culvert	3.9	58	1975		5	4	9
78	Kerry Road	CSP Round Culvert	1.8	92	2005		2	2	4
79	Bilton Line	CSP Ellipse Culvert	3.8	68	1975		4	4	8
80	Smith Falls Road	Rigid Frame, Vertical Legs	9.7	64	1930		4	4	8
81	Annett Road	CSP Round Culvert	1.4	54	1975		5	5	10
82	Downie Road	Rectangular Culvert	6.4	74	1970		4	3	7
83	Annett Road	CSP Ellipse Culvert	8.7	75	1980		3	3	6
84	Dobbyn Road	CSP Round Culvert	1.5	98	2007		2	2	4
85	Dobbyn Road	CSP Ellipse Culvert	4.8	71	1980		3	3	6
86	Dobbyn Road	CSP Ellipse Culvert	4.4	67	1980		4	4	8
87	Burr Road	CSP Ellipse Culvert	4.4	68	1980		4	4	8
88	Mosside Line	CSP Ellipse Culvert	***4.2***	100	2024		3	2	5
89	Burr Road	CSP Round Culvert	1.6	54	1980		5	5	10
90	Aughrim Line	I-beam or Girders	21-23-21	87	1972	2005	3	2	5
91	Mosside Line	CSP Round Culvert	1.7	57	1975		5	4	9
92	Johnston Road	CSP Ellipse Culvert	3.65	95	2015		2	2	4
93	Bentpath Line	Rectangular Culvert	5.5	52	1955		8	5	13
94	McCready Road	Rectangular Culvert	5	57	1935		4	5	9
95	Cameron Road	CSP Ellipse Culvert	4.6	64	1975		5	4	9
96	Cameron Road	CSP Ellipse Culvert	4.7	70	1985		4	3	7
97	McCready Road	CSP Ellipse Culvert	5.6	70	1980		3	3	6
98	Johnston Road	CSP Ellipse Culvert	5.3	72	1980		3	3	6
99	Johnston Road	CSP Round Culvert	1.7	57	1960		4	4	8
100	Cameron Road	CSP Ellipse Culvert	3.9	70	1985		3	3	6
101	McCready Road	CSP Ellipse Culvert	3.8	57	1970		5	4	9
102	Euphemia Line	Rectangular Culvert	3.1	64	1960		5	4	9
103	Johnston Road	CSP Ellipse Culvert	4.9	68	1985		4	4	8
104	Burr Road	CSP Round Culvert	2.7-2.7	95	2019		2	2	4
105	Hale School Road	Rectangular Voided Slab	12.9	73	1967	2016	4	3	7
106	Cameron Road	CSP Ellipse Culvert	6.4	57	1965		5	4	9
107	Waterworth Road	Rectangular Culvert	4.5	98	2015		2	2	4
108	Florence Road	Rectangular Culvert	3.6	73	1980		4	3	7
109	Florence Road	Round Culvert	0.75	40	1965		6	6	12

These 5 ***values*** from removed structure. New structure has not been inspected since construction

APPENDIX B

ROADS

Asset:	Roads
Inventory:	1.5 km of earth roads 412.6 km of gravel roads 25.9 km of surface treated roads 4.9 km of 1-lift paved roads 34.0 km of 2-lifts paved roads 478.9 km total road system
Anticipated Asset Life Cycle:	The probable life expectancies of a road section is affected by design, drainage, traffic volumes and loads, construction quality and climate. It is anticipated that there may be localized repairs and maintenance work such as crack sealing necessary to achieve the probable life expectancy. Generally the expected useful life for roads is: 30 years for a 2-lifts paved road, 15 years for a 1-lift paved road, 6 years for a surface treated road, and 100 years for a gravel road. Expected service life decreases as traffic volume per day increases.
Integration:	At this time, the Township of Dawn-Euphemia only has buried water assets, and no storm or waste water assets. Watermain replacement needs should be considered, however the earliest estimated watermain renewal is 2086. Other assets which may need to be considered during work on a road section include hydro, telephone, natural gas, cable, street lights, and sidewalks. If a road section includes a bridge, that structure should be reviewed to determine if any work needs to be performed prior to paving.
Rehabilitation and Replacement Criteria:	A Condition Rating (CR) is an assessment between one and ten with lower numbers describing roads with the most structural distress. The higher the rating number, the better the condition of the road. The CR takes into consideration the surface condition and structural adequacy of the road section based on the visual inspection. The CR does not consider the road width, vertical and horizontal alignment or an assessment of the road to determine whether it is constructed in accordance with suitable standards. CR point of rehabilitation for paved and surface treated roads is a CR of between 6 and 8, below 6 roads will require reconstruction. For gravel roads the point of rehabilitation is a CR of 5 and above, reconstruction below 5. Road sections with poor drainage identified will either be reviewed on an individual basis to determine whether drainage issues can be addressed by rehabilitation or whether reconstruction will be required. Earth roads will be reconstructed as gravel roads as warranted by changes in usage. As of the 2023 roads report the length weighted average CR for paved roads was 8.8, 7.4 for surface treated roads and 7.6 for gravel roads.
Rehabilitation and Replacement Strategy:	For gravel roads regular grading and biennial application of 50 mm to 75 mm of granular 'A' will be used on all roads above a CR of 5. Where required, spot maintenance at isolated locations will be performed prior to the application of gravel. It is expected that this will maintain most gravel road sections at a CR of 5 or higher. When the CR of a gravel road falls below 5 and usage warrants reconstruction, the road section will be reconstructed with 450mm of granular B and 150 mm of granular A. Any organic materials present in the sub-base will be removed prior to reconstruction and drainage issues will be addressed. For gravel roads with less than 50 AADT (average annual daily traffic) the CR may be allowed to deteriorate beyond 5 in favour of performing capital works on other, higher traffic, road sections. These lower traffic gravel road sections would have capital improvements performed as the budget permits. For paved roads crack sealing will be performed as a maintenance activity where the deterioration level is not too severe, typically a CR above 8. Depending on road section location, urban, semi-urban, rural and condition of the road section one of the following strategies will be selected: Total reconstruction with 350mm granular B, 150 mm granular A and 40mm to 80mm of hot mix asphalt. Mill and resurface pavement with 32mm to 40mm of hot mix asphalt. Mill and resurface patches of pavement with 50mm of hot mix asphalt. For surface treated roads crack sealing will be performed as a maintenance activity where the CR is above 8. Depending on road section location, and condition of the road section one of the following will be selected: Mill and resurface road or road sections with one to two lift surface treatment. Total reconstruction with 350mm granular B, 150 mm granular A and one to two lifts of surface treatment.

Risks Associated with not Implementing Strategy:	If rehabilitation does not occur at the recommended CR level, road sections will deteriorate further until reconstruction is the only option to restore the level of service, this will result in higher construction costs. If road sections are allowed to deteriorate beyond the threshold for reconstruction, the Township's risk and liability for those road sections will increase.
Integrated Asset Priorities:	Road section rehabilitation and reconstruction forecasts are to be compared to forecasts for bridge and underground utility rehabilitation and reconstruction. The co-ordination of projects will occur internally between Township departments.
Related Reports on Asset Type:	2023 Road Management Study - dated March 26, 2024 Revised July 24, 2024 completed by B.M. Ross and Associates Ltd.
Estimated Cost per year for Strategy Described:	$380,400/year for the next 10 years for rehabilitation and construction (for boundary roads, this estimate has already been reduced by 50%) $46,500/year for the next 5 years for maintenance Costs are to be adjusted as required in future reports
Review Schedule and Procedure:	Road sections shall be reviewed regularly by the Township road crew as part of their routine maintenance activities. Every 5 years a more thorough inventory review will be performed by Township staff or outside consultants in order to assign condition ratings, compare them to the level of service targets, and prepare a more detailed 5 year work plan.
Other Information or reference materials:	

Road Construction Needs
Sorted by Former Municipality, Proposed Year of Need and Priority Score

Township of Dawn-Euphemia
Road Management Study

Section ID	Former Mun.	Road Name	From	To	Section Length (m)	Surface Type	Traffic Range (vpd)	Road Construction Needs	Theo. Year of Need	Proposed Year of Work	Priority	Probable Costs ($,000)
10102	Dawn, Township of	Dawn Valley Road	Lambton Line	Langbank Line	3077	LCB - 2 lifts	50-199	Rural Pulverize and Two Lifts Surface Treatment Raise Road	2027	2027	10.3	723.9
10103	Dawn, Township of	Dawn Valley Road	Langbank Line	Bentpath Line	3074	LCB - 2 lifts	50-199	Rural Pulverize and Two Lifts Surface Treatment Raise Road	2027	2027	10.3	723.4
10402	Dawn, Township of	Marthaville Road	Lambton Line	Langbank Line	3071	LCB - 2 lifts	500-999	Surface Treatment - Single surface	2028	2028	9.8	181.2
10403	Dawn, Township of	Marthaville Road	Langbank Line	Bentpath Line	3078	LCB - 2 lifts	500-999	Surface Treatment - Single surface	2028	2028	9.8	181.6
33405	Dawn, Township of	Aberfeldy Line	Marthaville Road	Tramway Road	1337	LCB - 2 lifts	200-499	Surface Treatment - Single surface Boundary Road - Enniskillen's cost	2027	2028	9.3	39.4
33401	Dawn, Township of	Aberfeldy Line	Mandaumin Road	Dawn Valley Road	1318	LCB - 2 lifts	200-499	Surface Treatment - Single surface Boundary Road - Enniskillen's cost	2027	2028	9.0	38.9
10405	Dawn, Township of	Marthaville Road	Edys Mills Line	Aberfeldy Line	2280	LCB - 2 lifts	200-499	Surface Treatment - Single surface	2028	2028	8.8	134.5
10404	Dawn, Township of	Marthaville Road	Bentpath Line	Edys Mills Line	3075	LCB - 2 lifts	200-499	Surface Treatment - Single surface	2028	2028	8.8	181.4
33403	Dawn, Township of	Aberfeldy Line	Cuthbert Road	Robinson Road	1356	LCB - 2 lifts	200-499	Surface Treatment - Single surface Boundary Road - Enniskillen's cost	2027	2028	8.3	40.0
33404	Dawn, Township of	Aberfeldy Line	Robinson Road	Marthaville Road	1413	LCB - 2 lifts	200-499	Surface Treatment - Single surface Boundary Road - Enniskillen's cost	2027	2028	8.3	41.7
33406	Dawn, Township of	Aberfeldy Line	Tramway Road	Esterville Road	1393	LCB - 2 lifts	200-499	Surface Treatment - Single surface Boundary Road - Enniskillen's cost	2027	2028	7.3	41.1
33402	Dawn, Township of	Aberfeldy Line	Dawn Valley Road	Cuthbert Road	1424	LCB - 2 lifts	50-199	Surface Treatment - Single surface Boundary Road - Enniskillen's cost	2027	2028	7.3	42.0
33407	Dawn, Township of	Aberfeldy Line	Esterville Road	Oil Heritage Road	1171	HCB - 1 lift	200-499	Surface Treatment - Single surface Boundary Road - Enniskillen's cost	2031	2031	9.3	34.5
31509	Dawn, Township of	Lambton Line	Pantry School Road	Gould Road	1380	HCB - 2 lifts	500-999	Rural partial depth cold in place and pave (50mm HL-4)	2033	2033	11.3	407.0
31510	Dawn, Township of	Lambton Line	Gould Road	Huffs Corners Road	1380	HCB - 2 lifts	500-999	Rural partial depth cold in place and pave (50mm HL-4)	2033	2033	11.3	407.1
15	Euphemia, Township of	Gunne Street	Florence Road	Mary St	205	HCB - 1 lift	0-49	Semi-Urban Full depth pulverize and pave	2028	2029	8.8	53.3
16	Euphemia, Township of	Mary Street	Fansher St	Gunne St	70	HCB - 1 lift	0-49	Semi-Urban Full depth pulverize and pave	2028	2029	7.8	18.3

Road Construction Needs
Sorted by Former Municipality, Proposed Year of Need and Priority Score

Township of Dawn-Euphemia
Road Management Study

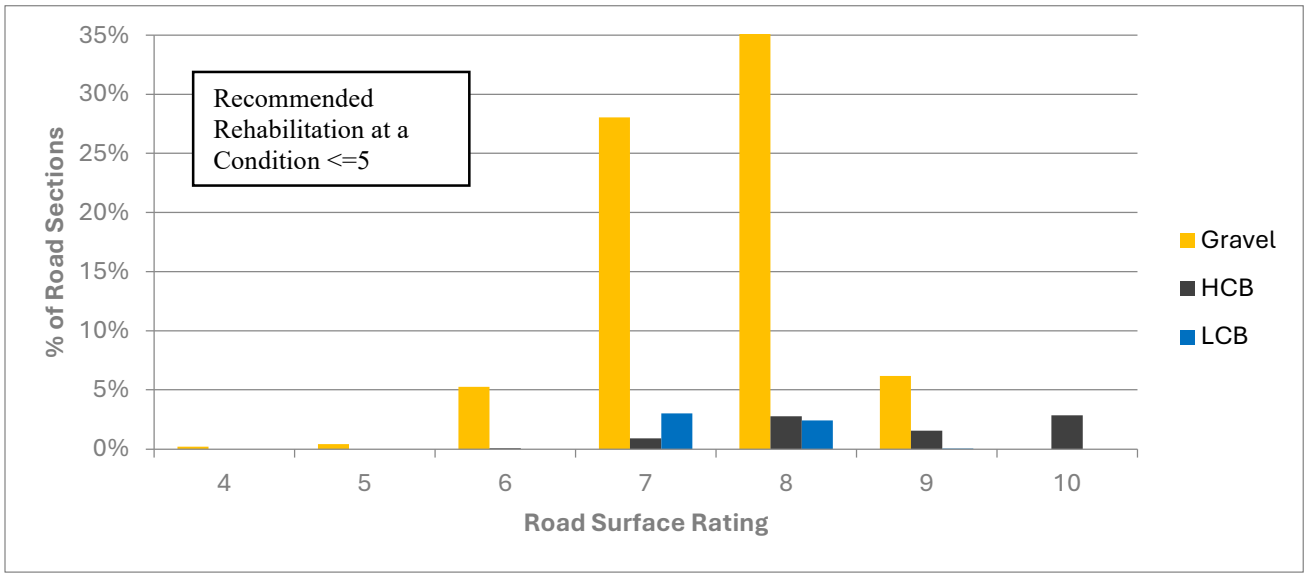
Section ID	Former Mun.	Road Name	From	To	Section Length (m)	Surface Type	Traffic Range (vpd)	Road Construction Needs	Theo. Year of Need	Proposed Year of Work	Priority	Probable Costs ($,000)
6	Euphemia, Township of	Union Street	Florence Road	Joseph St	183	HCB - 1 lift	0-49	Semi-Urban Full depth pulverize and pave	2032	2029	7.3	47.5
10	Euphemia, Township of	Arthur Street	Florence Road	Lenover St	133	HCB - 1 lift	0-49	Semi-Urban Full depth pulverize and pave	2032	2029	7.3	34.6
2	Euphemia, Township of	Water Street	Florence Road	westerly	43	LCB - 1 lift	0-49	Surface Treatment - Single surface	2029	2029	5.8	4.5
42511	Euphemia, Township of	Bentpath Line	Cameron Road	Watterworth Road	930	HCB - 2 lifts	500-999	Fibre-mat surface treatment	> 2033	2030	7.8	77.2
42510	Euphemia, Township of	Bentpath Line	McCready Road	Cameron Road	1380	HCB - 2 lifts	500-999	Fibre-mat surface treatment	> 2033	2030	7.8	114.6
42508	Euphemia, Township of	Bentpath Line	Cairo Road	Johnston Road	1391	HCB - 2 lifts	500-999	Fibre-mat surface treatment	> 2033	2030	7.8	115.4
42509	Euphemia, Township of	Bentpath Line	Johnston Road	McCready Road	1353	HCB - 2 lifts	500-999	Fibre-mat surface treatment	> 2033	2030	7.8	112.3
12	Euphemia, Township of	Edward Street	Arthur St	northerly	62	LCB - 1 lift	0-49	Surface Treatment - Single surface	2030	2031	7.3	3.7
18	Euphemia, Township of	Joseph Street	Union St	end	77	LCB - 1 lift	0-49	Surface Treatment - Single surface	2030	2031	6.3	4.5

Recommended Road Maintenance Needs
Sorted by Former Municipality, Traffic Range and Section Number

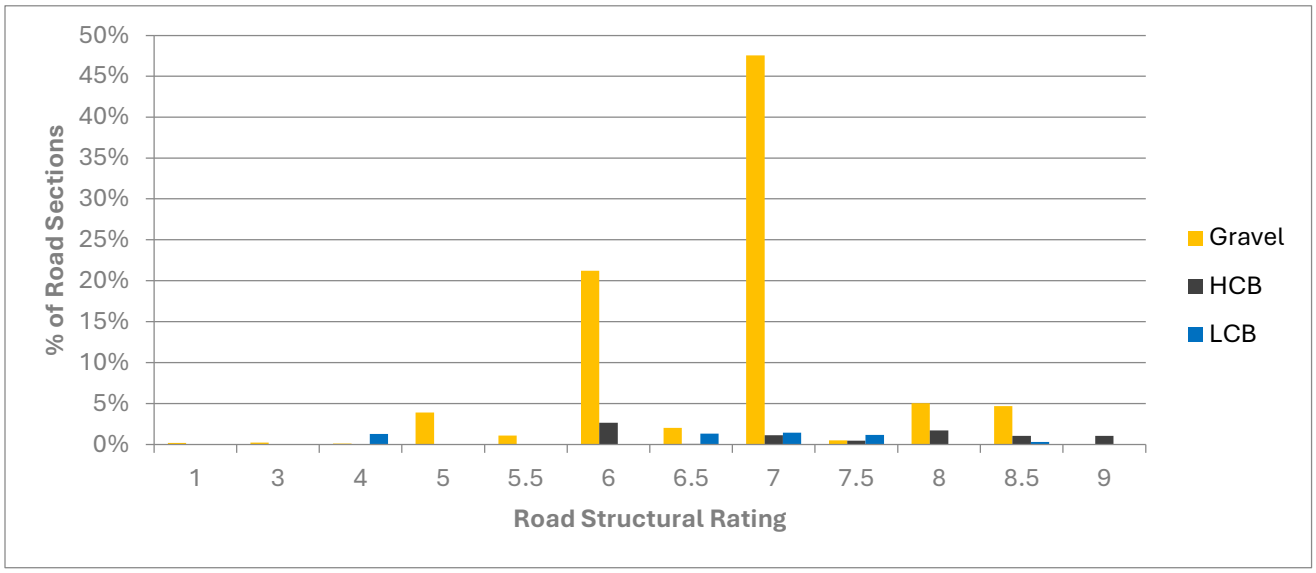
Township of Dawn-Euphemia
Road Management Study

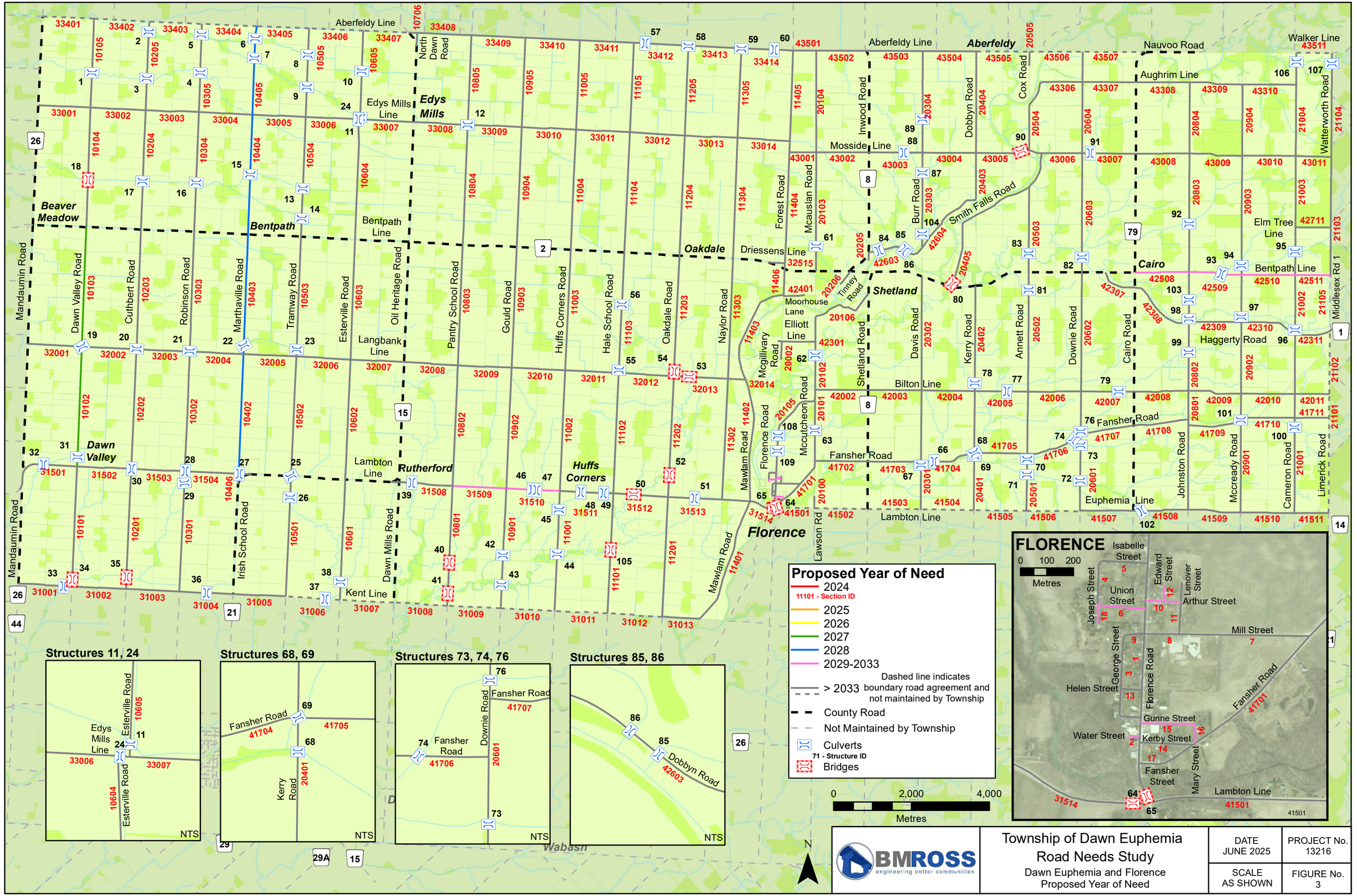
Section ID	Former Mun.	Road Name	From	To	Surface Type	Traffic Range (vpd)	Recommended Spot Road and Drainage	Recommended Specific Maintenance	Total Maintenance Cost ($,000)
43505	Euphemia, Township of	Aberfeldy Line	Dobbyn Road	Cox Road	Gravel	50-199		Gravel Resurfacing, 50mm Ditching Improvements (Full Length)	44.3
20405	Euphemia, Township of	Smith Falls Road	Bentpath Line	Mosside Line	Gravel	0-49		Ditching Improvements (Full Length) Edge widening 1200 metres 1 side	193.9
20504	Euphemia, Township of	Aughrim Line	Mosside Line	Aughrim Line	Gravel	0-49		Raise Road Edge widening for 500 metres	226.9
								Total:	465.1

Condition Rating by Road Surface



Condition Rating by Road Structural

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Bentpath Line
Langbank Line
Lambton Line
Kent Line
Mosside Line
Driessens Line
Moorhouse Lane
Elliott Line
Bilton Line
Fansher Road
Euphemia Line
Nauvoo Road
Aughrim Line
Elm Tree Line
Haggerty Road
Walker Line
Middlesex Rd 1
Mandaumin Road
Dawn Valley Road
Cuthbert Road
Robinson Road
Marthaville Road
Tramway Road
Esterville Road
Oil Heritage Road
Pantry School Road
Gould Road
Huffs Corners Road
Hale School Road
Oakdale Road
Naylor Road
Mcgillivary Road
Shetland Road
Davis Road
Kerry Road
Annett Road
Downie Road
Cairo Road
Johnston Road
Mccready Road
Cameron Road
Limerick Road
Watterworth Road
Cox Road
Dobbyn Road
Inwood Road
Mcauslan Road
Forest Road
Burr Road
Smith Falls Road
Timney Road
Florence Road
Mcculcheon Road
Lawson Rd
Mawlam Road
Irish School Road
Dawn Mills Road
North Dawn Road
Beaver Meadow
Dawn Valley
Edys Mills
Bentpath
Oakdale
Shetland
Aberfeldy
Cairo
Rutherford
Huffs Corners
Florence
Wabash
Beaver Meadow
Dawn Valley
Edys Mills
Bentpath
Oakdale
Shetland
Aberfeldy
Cairo
Rutherford
Huffs Corners
Florence
Wabash
Structures 11, 24
Edys Mills Line
Esterville Road
Esterville Road
NTS
Structures 68, 69
Fansher Road
Kerry Road
NTS
Structures 73, 74, 76
Fansher Road
Downie Road
Fansher Road
NTS
Structures 85, 86
Dobbyn Road
NTS
Proposed Year of Need
2024
11101 - Section ID
2025
2026
2027
2028
2029-2033
> 2033
Dashed line indicates boundary road agreement and not maintained by Township
County Road
Not Maintained by Township
Culverts
71 - Structure ID
Bridges
0 2,000 4,000
Metres
FLORENCE
0 100 200
Metres
Isabelle Street
Edward Street
Lenover Street
Union Street
Arthur Street
Joseph Street
Mill Street
George Street
Florence Road
Fansher Road
Helen Street
Gunne Street
Water Street
Kerby Street
Fansher Street
Mary Street
Lambton Line
41501
N
BMROSS
engineering better communities
Township of Dawn Euphemia
Road Needs Study
Dawn Euphemia and Florence
Proposed Year of Need
DATE
JUNE 2025
PROJECT No.
13216
SCALE
AS SHOWN
FIGURE No.
3

Inventory Summary Sheet
Sorted by Road Section Number

Township of Dawn-Euphemia
Road Management Study

Section Number	Road Name	From	To	Section Length (m)	Roadside Environment	Surface Type	Platform Width (m)	Surface Width (m)	Traffic Range (vpd)	Commercial Traffic	Surface Condition Rating	Structure Condition Rating
1	Florence Road	Lambton Line	Hamlet hard-top	1338	Semi-Urban	HCB - 1 lift	9.0	7.0	500-999	Local	8	8.0
2	Water Street	Florence Road	westerly	43	Rural	HCB - 2 lifts	7.0	7.5	0-49	Local	8	7.5
3	George Street	Florence Road	Mill St	382	Semi-Urban	HCB - 1 lift	7.0	6.3	0-49	Local	8	8.0
4	Joseph Street	Union St	Isabelle St	159	Semi-Urban	HCB - 1 lift	7.0	6.3	0-49	Local	8	8.0
5	Isabelle Street	Florence Road	Joseph St	179	Semi-Urban	HCB - 1 lift	7.0	6.3	0-49	Local	8	8.5
6	Union Street	Florence Road	Joseph St	183	Semi-Urban	HCB - 1 lift	7.0	6.3	0-49	Local	7	8.0
7	Mill Street	Hamlet boundary	Fansher Road	433	Rural	Gravel	8.0	6.5	0-49	Local	7	7.5
8	Mill Street	Florence Road	Hamlet boundary	192	Semi-Urban	HCB - 1 lift	8.0	6.3	50-199	Local	8	8.0
9	Mill Street	Florence Road	George St	74	Semi-Urban	HCB - 1 lift	7.0	6.3	0-49	Local	8	8.5
10	Arthur Street	Florence Road	Lenover St	133	Semi-Urban	HCB - 1 lift	7.0	6.3	0-49	Local	7	7.0
11	Lenover Street	Mill St	Arthur	197	Semi-Urban	HCB - 1 lift	7.0	6.3	0-49	Local	8	7.5
12	Edward Street	Arthur St	northerly	62	Rural	HCB - 2 lifts	7.0	5.5	0-49	Local	9	6.5
13	Helen Street	Florence Road	George St	79	Semi-Urban	HCB - 1 lift	7.0	6.3	0-49	Local	8	8.5
14	Kerby Street	Florence Road	Fansher St	201	Semi-Urban	HCB - 1 lift	7.0	6.3	0-49	Local	8	8.5
15	Gunne Street	Florence Road	Mary St	205	Semi-Urban	HCB - 1 lift	7.0	6.3	0-49	Local	6	6.5
16	Mary Street	Fansher St	Gunne St	70	Semi-Urban	HCB - 1 lift	7.0	6.3	0-49	Local	6	6.5
17	Fansher Street	Florence Road	Fansher Road	269	Semi-Urban	HCB - 1 lift	7.0	6.3	0-49	Local	8	8.0
18	Joseph Street	Union St	end	77	Rural	HCB - 1 lift	7.0	4.5	0-49	Local	9	7.0
10101	Dawn Valley Road	Kent Line	Lambton Line	3087	Rural	Gravel	11.0	7.0	50-199	Local	8	7.0
10102	Dawn Valley Road	Lambton Line	Langbank Line	3077	Rural	LCB - 2 lifts	11.0	7.0	50-199	Local	7	4.0
10103	Dawn Valley Road	Langbank Line	Bentpath Line	3074	Rural	LCB - 2 lifts	9.0	7.0	50-199	Local	7	4.0
10104	Dawn Valley Road	Bentpath Line	Edys Mills Line	3070	Rural	Gravel	9.0	6.8	0-49	Local	8	7.0
10105	Dawn Valley Road	Edys Mills Line	Aberfeldy Line	2285	Rural	Gravel	9.0	7.0	0-49	Local	8	7.0
10201	Cuthbert Road	Kent Line	Lambton Line	3089	Rural	Gravel	9.0	7.0	0-49	Local	8	7.0
10202	Cuthbert Road	Lambton Line	Langbank Line	3071	Rural	Gravel	9.0	7.0	50-199	Local	9	7.0
10203	Cuthbert Road	Langbank Line	Bentpath Line	3078	Rural	Gravel	9.0	7.0	50-199	Local	9	7.0
10204	Cuthbert Road	Bentpath Line	Edys Mills Line	3067	Rural	Gravel	9.0	7.0	50-199	Local	8	7.0
10205	Cuthbert Road	Edys Mills Line	Aberfeldy Line	2276	Rural	Gravel	9.0	7.0	0-49	Local	9	7.0
10301	Robinson Road	Kent Line	Lambton Line	3096	Rural	Gravel	9.0	7.0	50-199	Local	9	7.0

Inventory Summary Sheet
Sorted by Road Section Number

Township of Dawn-Euphemia
Road Management Study

Section Number	Road Name	From	To	Section Length (m)	Roadside Environment	Surface Type	Platform Width (m)	Surface Width (m)	Traffic Range (vpd)	Commercial Traffic	Surface Condition Rating	Structure Condition Rating
10302	Robinson Road	Lambton Line	Langbank Line	3074	Rural	Gravel	9.0	7.0	50-199	Local	9	7.0
10303	Robinson Road	Langbank Line	Bentpath Line	3081	Rural	Gravel	9.0	7.0	50-199	Local	9	7.0
10304	Robinson Road	Bentpath Line	Edys Mills Line	3074	Rural	Gravel	9.0	7.0	0-49	Local	8	7.0
10305	Robinson Road	Edys Mills Line	Aberfeldy Line	2265	Rural	Gravel	9.0	7.0	0-49	Local	8	7.0
10402	Marthaville Road	Lambton Line	Langbank Line	3071	Rural	LCB - 2 lifts	11.0	7.0	500-999	Local	9	6.5
10403	Marthaville Road	Langbank Line	Bentpath Line	3078	Rural	LCB - 2 lifts	11.0	6.8	500-999	Local	9	7.0
10404	Marthaville Road	Bentpath Line	Edys Mills Line	3075	Rural	LCB - 2 lifts	11.0	6.8	200-499	Local	9	6.5
10405	Marthaville Road	Edys Mills Line	Aberfeldy Line	2280	Rural	LCB - 2 lifts	11.0	6.8	200-499	Local	9	7.0
10406	Irish School Road	Irish School Road	Lambton Line	267	Rural	HCB - 2 lifts	12.0	6.8	500-999	Local	9	8.0
10501	Tramway Road	Kent Line	Lambton Line	3090	Rural	Gravel	9.0	7.0	50-199	Local	9	7.0
10502	Tramway Road	Lambton Line	Langbank Line	3075	Rural	Gravel	9.0	7.0	50-199	Local	9	7.0
10503	Tramway Road	Langbank Line	Bentpath Line	3078	Rural	Gravel	9.0	7.0	0-49	Local	9	7.0
10504	Tramway Road	Bentpath Line	Edys Mills Line	3077	Rural	Gravel	9.0	7.0	50-199	Local	9	7.0
10505	Tramway Road	Edys Mills Line	Aberfeldy Line	2276	Rural	Gravel	9.0	7.0	50-199	Local	8	7.0
10601	Esterville Road	Kent Line	Lambton Line	3090	Rural	Gravel	9.0	6.3	50-199	Local	8	7.0
10602	Esterville Road	Lambton Line	Langbank Line	3084	Rural	Gravel	9.0	7.0	50-199	Local	9	7.0
10603	Esterville Road	Langbank Line	Bentpath Line	3084	Rural	Gravel	9.0	7.0	50-199	Local	8	7.0
10604	Esterville Road	Bentpath Line	Edys Mills Line	3096	Rural	Gravel	9.0	7.0	0-49	Local	9	7.0
10605	Esterville Road	Edys Mills Line	Aberfeldy Line	2280	Rural	Gravel	9.0	7.0	0-49	Local	8	7.0
10706	North Dawn Road	Oil Heritage Road	Aberfeldy Line	343	Rural	Gravel	9.0	7.0	0-49	Local	8	7.0
10801	Pantry School Road	Kent Line	Lambton Line	3081	Rural	Gravel	9.0	7.0	50-199	Local	7	7.0
10802	Pantry School Road	Lambton Line	Langbank Line	3098	Rural	Gravel	9.0	7.0	0-49	Local	7	7.0
10803	Pantry School Road	Langbank Line	Bentpath Line	3095	Rural	Gravel	9.0	7.0	0-49	Local	8	7.0
10804	Pantry School Road	Bentpath Line	Edys Mills Line	3085	Rural	Gravel	9.0	7.0	0-49	Local	9	7.0
10805	Pantry School Road	Edys Mills Line	Aberfeldy Line	2309	Rural	Gravel	9.0	7.0	50-199	Local	8	7.0
10901	Gould Road	Kent Line	Lambton Line	3086	Rural	Gravel	9.0	7.0	0-49	Local	8	7.0
10902	Gould Road	Lambton Line	Langbank Line	3100	Rural	Gravel	9.0	7.0	0-49	Local	8	7.0
10903	Gould Road	Langbank Line	Bentpath Line	3101	Rural	Gravel	9.0	7.0	50-199	Local	8	7.0
10904	Gould Road	Bentpath Line	Edys Mills Line	3083	Rural	Gravel	9.0	7.0	50-199	Local	8	7.0

Inventory Summary Sheet
Sorted by Road Section Number

Township of Dawn-Euphemia
Road Management Study

Section Number	Road Name	From	To	Section Length (m)	Roadside Environment	Surface Type	Platform Width (m)	Surface Width (m)	Traffic Range (vpd)	Commercial Traffic	Surface Condition Rating	Structure Condition Rating
10905	Gould Road	Edys Mills Line	Aberfeldy Line	2296	Rural	Gravel	9.0	7.0	0-49	Local	9	7.0
11001	Huffs Corners Road	Kent Line	Lambton Line	3089	Rural	Gravel	9.0	7.0	0-49	Local	8	7.0
11002	Huffs Corners Road	Lambton Line	Langbank Line	3097	Rural	Gravel	9.0	7.0	0-49	Local	8	7.0
11003	Huffs Corners Road	Langbank Line	Bentpath Line	3101	Rural	Gravel	9.0	7.0	0-49	Local	9	7.0
11004	Huffs Corners Road	Bentpath Line	Edys Mills Line	3089	Rural	Gravel	9.0	7.0	0-49	Local	8	7.0
11005	Huffs Corners Road	Edys Mills Line	Aberfeldy Line	2296	Rural	Gravel	8.0	7.0	0-49	Local	9	7.0
11101	Hale School Road	Kent Line	Lambton Line	3082	Rural	Gravel	9.0	7.0	50-199	Local	9	7.0
11102	Hale School Road	Lambton Line	Langbank Line	3095	Rural	Gravel	9.0	7.0	0-49	Local	8	7.0
11103	Hale School Road	Langbank Line	Bentpath Line	3099	Rural	Gravel	9.0	7.0	50-199	Local	8	7.0
11104	Hale School Road	Bentpath Line	Edys Mills Line	3089	Rural	Gravel	9.0	7.0	0-49	Local	9	7.0
11105	Hale School Road	Edys Mills Line	Aberfeldy Line	2299	Rural	Gravel	11.0	7.0	0-49	Local	9	7.0
11201	Oakdale Road	Kent Line	Lambton Line	3084	Rural	HCB - 2 lifts	11.0	6.8	200-499	Local	10	7.0
11202	Oakdale Road	Lambton Line	Langbank Line	3104	Rural	Gravel	9.0	8.0	50-199	Local	9	7.0
11203	Oakdale Road	Langbank Line	Bentpath Line	3098	Rural	Gravel	9.0	8.0	50-199	Local	9	7.0
11204	Oakdale Road	Bentpath Line	Edys Mills Line	3087	Rural	Gravel	9.0	7.5	0-49	Local	8	7.0
11205	Oakdale Road	Edys Mills Line	Aberfeldy Line	2312	Rural	Gravel	9.0	7.0	0-49	Local	8	7.0
11302	Naylor Road	Lambton Line	Langbank Line	3105	Rural	Gravel	9.0	7.0	0-49	Local	8	7.0
11303	Naylor Road	Langbank Line	Bentpath Line	3089	Rural	Gravel	9.0	7.0	50-199	Local	9	7.0
11304	Naylor Road	Bentpath Line	Edys Mills Line	3108	Rural	Gravel	9.0	7.0	0-49	Local	8	7.0
11305	Naylor Road	Edys Mills Line	Aberfeldy Line	2298	Rural	Gravel	9.0	7.0	0-49	Local	9	7.0
11401	Mawlam Road	Kent Line	Lambton Line	3340	Rural	Gravel	7.5	5.5	0-49	Local	9	7.0
11402	Mawlam Road	Lambton Line	Langbank Line	3159	Rural	Gravel	7.5	5.5	0-49	Local	9	7.0
11403	Mawlam Road	Langbank Line	Forest Rd	2761	Rural	Gravel	8.0	6.0	0-49	Local	8	7.0
11404	Forest Road	Bentpath Line	Edys Mills Line	3283	Rural	Gravel	8.0	5.8	0-49	Local	9	7.0
11405	Forest Road	Edys Mills Line	Aberfeldy Line	2330	Rural	Gravel	8.0	5.6	0-49	Local	8	7.0
11406	Forest Road	Mawlam Rd	Bentpath Line	663	Rural	Gravel	9.0	7.0	0-49	Local	8	7.0
20002	Mcgillivary Road	Elliott Line	S to Lot 21	469	Rural	Gravel	7.0	7.0	0-49	Local	6	3.0
20100	Lawson Road	Lambton Line	N to Fansher Creek	317	Rural	Gravel	9.0	7.0	0-49	Local	6	6.0
20101	McCutcheon Road	Fansher Road	Florence Road	1560	Rural	Gravel	9.0	7.0	0-49	Local	6	5.0

Inventory Summary Sheet
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Township of Dawn-Euphemia
Road Management Study

Section Number	Road Name	From	To	Section Length (m)	Roadside Environment	Surface Type	Platform Width (m)	Surface Width (m)	Traffic Range (vpd)	Commercial Traffic	Surface Condition Rating	Structure Condition Rating
20102	Florence Road	McCutcheon Rd	the River	2165	Rural	Gravel	9.0	7.0	50-199	Local	7	6.0
20103	McAuslan Road	Bentpath Line	Mosside Line	3054	Rural	Gravel	8.0	7.0	0-49	Local	7	6.0
20104	McAuslan Road	Mosside Line	Aberfeldy Line	2609	Rural	Gravel	8.0	7.0	0-49	Local	7	6.0
20105	Florence Road	Hamlet hard-top	McCutcheon Rd	1968	Rural	Gravel	9.0	7.0	50-199	Local	7	6.0
20106	Florence Road	the River	Shetland Rd	1672	Rural	Gravel	9.0	7.0	50-199	Local	7	6.0
20205	Prangley Road	Inwood Road	southerly in Con 2	223	Rural	Gravel	7.0	7.0	0-49	Local	7	5.0
20206	Tinney Road	Bentpath Line	southerly in Con 2	424	Rural	Gravel	7.0	7.0	0-49	Local	6	4.0
20301	Davis Road	Lambton Line	Bilton Line	3052	Rural	Gravel	9.0	7.0	0-49	Local	7	6.0
20302	Davis Road	Bilton Line	Bentpath Line	2929	Rural	Gravel	9.0	7.0	0-49	Local	7	6.0
20303	Burr Road	Dobbyn Rd	Mosside Line	2437	Rural	Gravel	8.0	7.0	0-49	Local	7	6.0
20304	Burr Road	Mosside Line	Aberfeldy Line	2609	Rural	Gravel	8.0	7.0	0-49	Local	7	6.0
20401	Kerry Road	Lambton Line	Bilton Line	3060	Rural	Gravel	8.0	7.0	0-49	Local	7	6.0
20402	Kerry Road	Bilton Line	Bentpath Line	2700	Rural	Gravel	8.0	7.0	0-49	Local	7	6.0
20403	Dobbyn Road	River	Mosside Line	1169	Rural	Gravel	7.0	7.0	0-49	Local	6	6.0
20404	Dobbyn Road	Mosside Line	Aberfeldy Line	2603	Rural	Gravel	9.0	7.0	0-49	Local	7	6.0
20405	Smith Falls Road	Bentpath Line	Mosside Line	4586	Rural	Gravel	7.0	7.0	0-49	Local	6	5.0
20501	Annett Road	Lambton Line	Bilton Line	3061	Rural	Gravel	9.0	7.0	0-49	Local	7	6.0
20502	Annett Road	Bilton Line	Bentpath Line	3070	Rural	Gravel	9.0	7.0	0-49	Local	7	6.0
20503	Annett Road	Bentpath Line	Smith Falls Rd	2185	Rural	Gravel	8.0	7.0	0-49	Local	7	5.0
20504	Aughrim Line	Mosside Line	Aughrim Line	1861	Rural	Gravel	7.0	7.0	0-49	Local	7	5.0
20505	Cox Road	Lot 33/34 line	Aberfeldy Line	367	Rural	Gravel	5.0	7.0	0-49	Local	6	5.0
20601	Downie Road	Lambton Line	Bilton Line	3078	Rural	Gravel	9.0	7.0	0-49	Local	7	6.0
20602	Downie Road	Bilton Line	Bentpath Line	3058	Rural	Gravel	9.0	7.0	0-49	Local	7	6.0
20603	Downie Road	Bentpath Line	Mosside Line	3060	Rural	Gravel	9.0	7.0	50-199	Local	7	6.0
20604	Downie Road	Mosside Line	Aberfeldy Line	2603	Rural	Gravel	9.0	7.0	0-49	Local	7	6.0
20801	Johnston Road	Euphemia Line	Bilton Line	3048	Rural	Gravel	9.0	7.0	50-199	Local	7	7.0
20802	Johnston Road	Bilton Line	Bentpath Line	3052	Rural	Gravel	9.0	7.0	0-49	Local	8	7.0
20803	Johnston Road	Bentpath Line	Mosside Line	3045	Rural	Gravel	8.0	7.0	0-49	Local	7	6.0
20804	Johnston Road	Mosside Line	Aughrim Line	1832	Rural	Gravel	8.0	7.0	0-49	Local	7	6.0

Inventory Summary Sheet
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Township of Dawn-Euphemia
Road Management Study

Section Number	Road Name	From	To	Section Length (m)	Roadside Environment	Surface Type	Platform Width (m)	Surface Width (m)	Traffic Range (vpd)	Commercial Traffic	Surface Condition Rating	Structure Condition Rating
20901	McCready Road	Euphemia Line	Bilton Line	3054	Rural	Gravel	9.0	7.0	50-199	Local	8	7.0
20902	McCready Road	Bilton Line	Bentpath Line	3052	Rural	Gravel	8.0	7.0	0-49	Local	8	7.0
20903	McCready Road	Bentpath Line	Mosside Line	3055	Rural	Gravel	8.0	7.0	0-49	Local	7	6.0
20904	McCready Road	Mosside Line	Aughrim Line	1833	Rural	Gravel	8.0	7.0	0-49	Local	7	6.0
21001	Cameron Road	Euphemia Line	Bilton Line	3056	Rural	Gravel	9.0	7.0	0-49	Local	7	6.0
21002	Cameron Road	Bilton Line	Bentpath Line	3054	Rural	Gravel	9.0	5.8	50-199	Local	9	8.0
21003	Cameron Road	Bentpath Line	Mosside Line	3057	Rural	Gravel	8.0	6.5	50-199	Local	9	8.5
21004	Cameron Road	Mosside Line	Walker Line	2648	Rural	Gravel	8.0	7.0	50-199	Local	9	7.0
21101	Limerick Road	Euphemia Line	Bilton Line	3055	Rural	Gravel	9.0	7.0	50-199	Local	8	6.0
21102	Limerick Road	Bilton Line	Haggerty Road	1621	Rural	Gravel	9.0	7.0	50-199	Local	8	6.0
21103	Watterworth Road	Bentpath Line	Mosside Line	3088	Rural	Gravel	9.0	6.2	0-49	Local	9	8.0
21104	Watterworth Road	Mosside Line	Walker Line	2672	Rural	Gravel	9.0	6.5	0-49	Local	9	8.0
21105	Middlesex Rd 1	Haggerty Road	Bentpath Line	1344	Rural	HCB - 2 lifts	12.0	7.0	500-999	Local	9	8.0
31001	Kent Line	Mandaumin Road	Dawn Valley Road	1378	Rural	Gravel	9.0	7.0	50-199	Local	8	7.0
31002	Kent Line	Dawn Valley Road	Cuthbert Road	1391	Rural	Gravel	9.0	6.9	50-199	Local	7	6.5
31003	Kent Line	Cuthbert Road	Robinson Road	1374	Rural	Gravel	9.0	7.3	50-199	Local	8	7.0
31004	Kent Line	Robinson Road	Irish School Road	1380	Rural	Gravel	9.0	7.2	50-199	Local	8	7.0
31005	Kent Line	Irish School Road	Tramway Road	1356	Rural	Gravel	9.0	7.0	50-199	Local	8	7.0
31006	Kent Line	Tramway Road	Esterville Road	1391	Rural	Gravel	9.0	7.1	50-199	Local	8	7.0
31007	Kent Line	Esterville Road	Dawn Mills Road	1391	Rural	Gravel	9.0	7.0	50-199	Local	8	7.0
31008	Kent Line	Dawn Mills Road	Pantry School Road	1373	Rural	Gravel	9.0	7.0	50-199	Local	9	7.0
31009	Kent Line	Pantry School Road	Gould Road	1373	Rural	Gravel	9.0	7.0	50-199	Local	8	7.0
31010	Kent Line	Gould Road	Huffs Corners Road	1385	Rural	Gravel	9.0	7.0	0-49	Local	8	7.0
31011	Kent Line	Huffs Corners Road	Hale School Road	1366	Rural	Gravel	9.0	7.0	50-199	Local	8	7.0
31012	Kent Line	Hale School Road	Oakdale Road	1411	Rural	Gravel	9.0	7.0	0-49	Local	8	7.0
31013	Kent Line	Oakdale Road	Mawlam Road	957	Rural	Gravel	9.0	6.8	0-49	Local	8	7.0
31501	Lambton Line	Mandaumin Road	Dawn Valley Road	1935	Rural	HCB - 2 lifts	12.0	6.9	500-999	Local	10	7.5
31502	Lambton Line	Dawn Valley Road	Cuthbert Road	1393	Rural	HCB - 2 lifts	12.0	6.8	500-999	Local	10	8.5
31503	Lambton Line	Cuthbert Road	Robinson Road	1374	Rural	HCB - 2 lifts	12.0	6.8	500-999	Local	9	8.0

Inventory Summary Sheet
Sorted by Road Section Number

Township of Dawn-Euphemia
Road Management Study

Section Number	Road Name	From	To	Section Length (m)	Roadside Environment	Surface Type	Platform Width (m)	Surface Width (m)	Traffic Range (vpd)	Commercial Traffic	Surface Condition Rating	Structure Condition Rating
31504	Lambton Line	Robinson Road	Marthaville Road	1719	Rural	HCB - 2 lifts	12.0	6.8	500-999	Local	9	8.5
31508	Lambton Line	Dawn Mills Road	Pantry School Road	1603	Rural	HCB - 2 lifts	12.0	7.0	500-999	Local	10	6.0
31509	Lambton Line	Pantry School Road	Gould Road	1380	Rural	HCB - 2 lifts	12.0	7.0	500-999	Local	7	6.0
31510	Lambton Line	Gould Road	Huffs Corners Road	1380	Rural	HCB - 2 lifts	12.0	7.0	500-999	Local	7	6.0
31511	Lambton Line	Huffs Corners Road	Hale School Road	1373	Rural	HCB - 2 lifts	12.0	7.0	500-999	Local	10	6.0
31512	Lambton Line	Hale School Road	Oakdale Road	1405	Rural	HCB - 2 lifts	12.0	7.0	500-999	Local	10	6.0
31513	Lambton Line	Oakdale Road	Naylor Road	1394	Rural	HCB - 2 lifts	12.0	7.0	500-999	Local	10	6.0
31514	Lambton Line	Naylor Road	Florence Road	1435	Rural	HCB - 2 lifts	12.0	7.0	500-999	Local	10	6.0
32001	Langbank Line	Mandaumin Road	Dawn Valley Road	1388	Rural	Gravel	9.0	7.0	50-199	Local	9	8.5
32002	Langbank Line	Dawn Valley Road	Cuthbert Road	1410	Rural	Gravel	9.0	7.0	0-49	Local	9	8.5
32003	Langbank Line	Cuthbert Road	Robinson Road	1367	Rural	Gravel	9.0	7.0	0-49	Local	9	8.5
32004	Langbank Line	Robinson Road	Marthaville Road	1383	Rural	Gravel	9.0	7.0	50-199	Local	9	8.5
32005	Langbank Line	Marthaville Road	Tramway Road	1357	Rural	Gravel	10.0	8.1	50-199	Local	9	8.0
32006	Langbank Line	Tramway Road	Esterville Road	1394	Rural	Gravel	10.0	8.0	50-199	Local	9	8.5
32007	Langbank Line	Esterville Road	Oil Heritage Road	1379	Rural	Gravel	10.0	8.0	50-199	Local	9	8.0
32008	Langbank Line	Oil Heritage Road	Pantry School Road	1381	Rural	Gravel	9.0	7.0	50-199	Local	9	8.0
32009	Langbank Line	Pantry School Road	Gould Road	1384	Rural	Gravel	9.0	7.0	50-199	Local	9	8.0
32010	Langbank Line	Gould Road	Huffs Corners Road	1382	Rural	Gravel	9.0	6.8	0-49	Local	9	8.0
32011	Langbank Line	Huffs Corners Road	Hale School Road	1375	Rural	Gravel	9.0	6.8	0-49	Local	9	8.0
32012	Langbank Line	Hale School Road	Oakdale Road	1418	Rural	Gravel	9.0	6.8	0-49	Local	9	8.0
32013	Langbank Line	Oakdale Road	Naylor Road	1391	Rural	Gravel	9.0	6.5	50-199	Local	8	7.5
32014	Langbank Line	Naylor Road	Mawlam Road	453	Rural	Gravel	9.0	6.5	0-49	Local	8	7.5
32515	Driessens Line	Bentpath Line	Forest Road	435	Rural	Gravel	7.0	7.0	0-49	Local	7	6.0
33001	Edys Mills Line	Mandaumin Road	Dawn Valley Road	1346	Rural	Gravel	9.0	7.0	0-49	Local	8	7.0
33002	Edys Mills Line	Dawn Valley Road	Cuthbert Road	1414	Rural	Gravel	9.0	7.0	0-49	Local	8	7.0
33003	Edys Mills Line	Cuthbert Road	Robinson Road	1370	Rural	Gravel	9.0	7.0	0-49	Local	8	7.0
33004	Edys Mills Line	Robinson Road	Marthaville Road	1380	Rural	Gravel	9.0	7.0	0-49	Local	8	7.0
33005	Edys Mills Line	Marthaville Road	Tramway Road	1369	Rural	Gravel	9.0	7.0	0-49	Local	8	7.0
33006	Edys Mills Line	Tramway Road	Esterville Road	1349	Rural	Gravel	9.0	7.0	50-199	Local	8	7.0

Inventory Summary Sheet
Sorted by Road Section Number

Township of Dawn-Euphemia
Road Management Study

Section Number	Road Name	From	To	Section Length (m)	Roadside Environment	Surface Type	Platform Width (m)	Surface Width (m)	Traffic Range (vpd)	Commercial Traffic	Surface Condition Rating	Structure Condition Rating
33007	Edys Mills Line	Esterville Road	Oil Heritage Road	1424	Rural	Gravel	9.0	7.0	50-199	Local	8	7.0
33008	Edys Mills Line	Oil Heritage Road	Pantry School Road	1395	Rural	Gravel	11.0	7.0	50-199	Local	8	7.0
33009	Edys Mills Line	Pantry School Road	Gould Road	1392	Rural	Gravel	9.0	7.0	50-199	Local	8	7.0
33010	Edys Mills Line	Gould Road	Huffs Corners Road	1393	Rural	Gravel	9.0	7.0	50-199	Local	8	7.0
33011	Edys Mills Line	Huffs Corners Road	Hale School Road	1389	Rural	Gravel	9.0	7.0	0-49	Local	8	7.0
33012	Edys Mills Line	Hale School Road	Oakdale Road	1412	Rural	Gravel	9.0	7.0	0-49	Local	8	7.0
33013	Edys Mills Line	Oakdale Road	Naylor Road	1359	Rural	Gravel	9.0	7.0	0-49	Local	8	7.0
33014	Edys Mills Line	Naylor Road	Forest Road	1346	Rural	Gravel	9.0	7.0	0-49	Local	8	7.0
33401	Aberfeldy Line	Mandaumin Road	Dawn Valley Road	1318	Rural	LCB - 2 lifts	9.0	6.3	200-499	Local	7	7.5
33402	Aberfeldy Line	Dawn Valley Road	Cuthbert Road	1424	Rural	LCB - 2 lifts	9.0	6.3	50-199	Local	7	7.5
33403	Aberfeldy Line	Cuthbert Road	Robinson Road	1356	Rural	LCB - 2 lifts	9.0	6.3	200-499	Local	7	7.5
33404	Aberfeldy Line	Robinson Road	Marthaville Road	1413	Rural	LCB - 2 lifts	9.0	6.3	200-499	Local	7	7.5
33405	Aberfeldy Line	Marthaville Road	Tramway Road	1337	Rural	LCB - 2 lifts	9.0	6.3	200-499	Local	7	7.0
33406	Aberfeldy Line	Tramway Road	Esterville Road	1393	Rural	LCB - 2 lifts	9.0	6.3	200-499	Local	7	8.5
33407	Aberfeldy Line	Esterville Road	Oil Heritage Road	1171	Rural	HCB - 1 lift	9.0	7.0	200-499	Local	7	7.0
33408	Aberfeldy Line	Oil Heritage Road	Pantry School Road	1618	Rural	Gravel	9.0	9.5	50-199	Local	7	7.0
33409	Aberfeldy Line	Pantry School Road	Gould Road	1377	Rural	Gravel	9.0	9.5	50-199	Local	7	8.0
33410	Aberfeldy Line	Gould Road	Huffs Corners Road	1403	Rural	Gravel	9.0	9.4	50-199	Local	9	8.5
33411	Aberfeldy Line	Huffs Corners Road	Hale School Road	1385	Rural	Gravel	9.0	9.6	50-199	Local	9	8.5
33412	Aberfeldy Line	Hale School Road	Oakdale Road	1408	Rural	Gravel	9.0	9.6	50-199	Local	9	8.0
33413	Aberfeldy Line	Oakdale Road	Naylor Road	1359	Rural	Gravel	9.0	9.3	50-199	Local	9	8.5
33414	Aberfeldy Line	Naylor Road	Forest Road	1331	Rural	Gravel	9.0	8.0	50-199	Local	9	8.5
41501	Lambton Line	Florence Road	Lawson Road	977	Rural	HCB - 2 lifts	12.0	7.0	50-199	Local	8	7.0
41502	Lambton Line	Lawson Road	Shetland Road	1363	Rural	HCB - 2 lifts	12.0	7.0	50-199	Local	8	8.0
41503	Lambton Line	Shetland Road	Davis Road	1369	Rural	HCB - 2 lifts	12.0	7.0	50-199	Local	8	8.0
41504	Lambton Line	Davis Road	Kerry Road	1364	Rural	HCB - 2 lifts	12.0	7.0	50-199	Local	8	9.0
41505	Lambton Line	Kerry Road	Annett Road	1353	Rural	HCB - 2 lifts	12.0	7.0	50-199	Local	9	6.0
41506	Lambton Line	Annett Road	Downie Road	1374	Rural	HCB - 2 lifts	12.0	7.0	50-199	Local	9	6.0
41507	Euphemia Line	Downie Road	Cairo Road	1370	Rural	Gravel	9.0	7.0	50-199	Local	8	6.0

Inventory Summary Sheet
Sorted by Road Section Number

Township of Dawn-Euphemia
Road Management Study

Section Number	Road Name	From	To	Section Length (m)	Roadside Environment	Surface Type	Platform Width (m)	Surface Width (m)	Traffic Range (vpd)	Commercial Traffic	Surface Condition Rating	Structure Condition Rating
41508	Euphemia Line	Cairo Road	Johnston Road	1413	Rural	Gravel	9.0	7.0	50-199	Local	7	6.0
41509	Euphemia Line	Johnston Road	McCready Road	1356	Rural	Gravel	9.0	7.0	50-199	Local	7	6.0
41510	Euphemia Line	McCready Road	Cameron Road	1383	Rural	Gravel	9.0	7.0	50-199	Local	7	6.0
41511	Euphemia Line	Cameron Road	Limerick Road	875	Rural	Gravel	9.0	7.0	0-49	Local	8	8.5
41701	Fansher Road	Fansher St	McCutcheon Road	1288	Rural	Gravel	8.0	5.8	50-199	Local	8	8.0
41702	Fansher Road	McCutcheon Road	Shetland Road	1363	Rural	Gravel	8.0	6.0	0-49	Local	9	8.5
41703	Fansher Road	Shetland Road	Davis Road	1368	Rural	Gravel	7.0	4.5	50-199	Local	8	6.5
41704	Fansher Road	Davis Road	Kerry Road	1422	Rural	Gravel	7.0	4.7	0-49	Local	8	6.5
41705	Fansher Road	Kerry Road	Annett Road	1360	Rural	Gravel	7.0	4.5	0-49	Local	8	6.5
41706	Fansher Road	Annett Road	Downie Road	1478	Rural	Gravel	7.0	4.5	0-49	Local	7	5.5
41707	Fansher Road	Downie Road	Cairo Road	1384	Rural	Gravel	7.0	4.5	0-49	Local	7	6.0
41708	Fansher Road	Cairo Road	Johnston Road	1413	Rural	Gravel	7.0	4.5	0-49	Local	7	5.5
41709	Fansher Road	Johnston Road	McCready Road	1357	Rural	Gravel	7.0	5.3	50-199	Local	7	6.5
41710	Fansher Road	McCready Road	Cameron Road	1381	Rural	Gravel	7.0	5.0	0-49	Local	7	6.0
41711	Fansher Road	Cameron Road	Limerick Road	882	Rural	Gravel	7.0	4.5	0-49	Local	7	6.0
42002	Bilton Line	Florence Road	Shetland Road	1360	Rural	Gravel	9.0	7.0	50-199	Local	7	6.0
42003	Bilton Line	Shetland Road	Davis Road	1371	Rural	Gravel	8.0	7.0	50-199	Local	7	6.0
42004	Bilton Line	Davis Road	Kerry Road	1370	Rural	Gravel	8.0	7.0	50-199	Local	7	6.0
42005	Bilton Line	Kerry Road	Annett Road	1365	Rural	Gravel	8.0	7.0	50-199	Local	7	6.0
42006	Bilton Line	Annett Road	Downie Road	1366	Rural	Gravel	8.0	7.0	0-49	Local	7	6.0
42007	Bilton Line	Downie Road	Cairo Road	1359	Rural	Gravel	8.0	7.0	0-49	Local	7	6.0
42008	Bilton Line	Cairo Road	Johnston Road	1400	Rural	Gravel	8.0	7.0	50-199	Local	7	6.0
42009	Bilton Line	Johnston Road	McCready Road	1369	Rural	Gravel	8.0	7.0	50-199	Local	6	6.0
42010	Bilton Line	McCready Road	Cameron Road	1386	Rural	Gravel	8.0	7.0	50-199	Local	6	6.0
42011	Bilton Line	Cameron Road	Limerick Road	880	Rural	Gravel	7.0	7.0	0-49	Local	7	6.0
42301	Elliott Line	Florence Road	W to Dawn Twln	974	Rural	Gravel	5.0	7.0	0-49	Local	7	6.0
42307	Haggerty Road	Bentpath Line	Cairo Road	945	Rural	Gravel	7.0	3.8	0-49	Local	6	5.5
42308	Haggerty Road	Cairo Road	Johnston Road	1776	Rural	Gravel	7.0	5.1	0-49	Local	6	6.0
42309	Haggerty Road	Johnston Road	McCready Road	1348	Rural	Gravel	7.0	5.1	50-199	Local	6	6.0

Inventory Summary Sheet
Sorted by Road Section Number

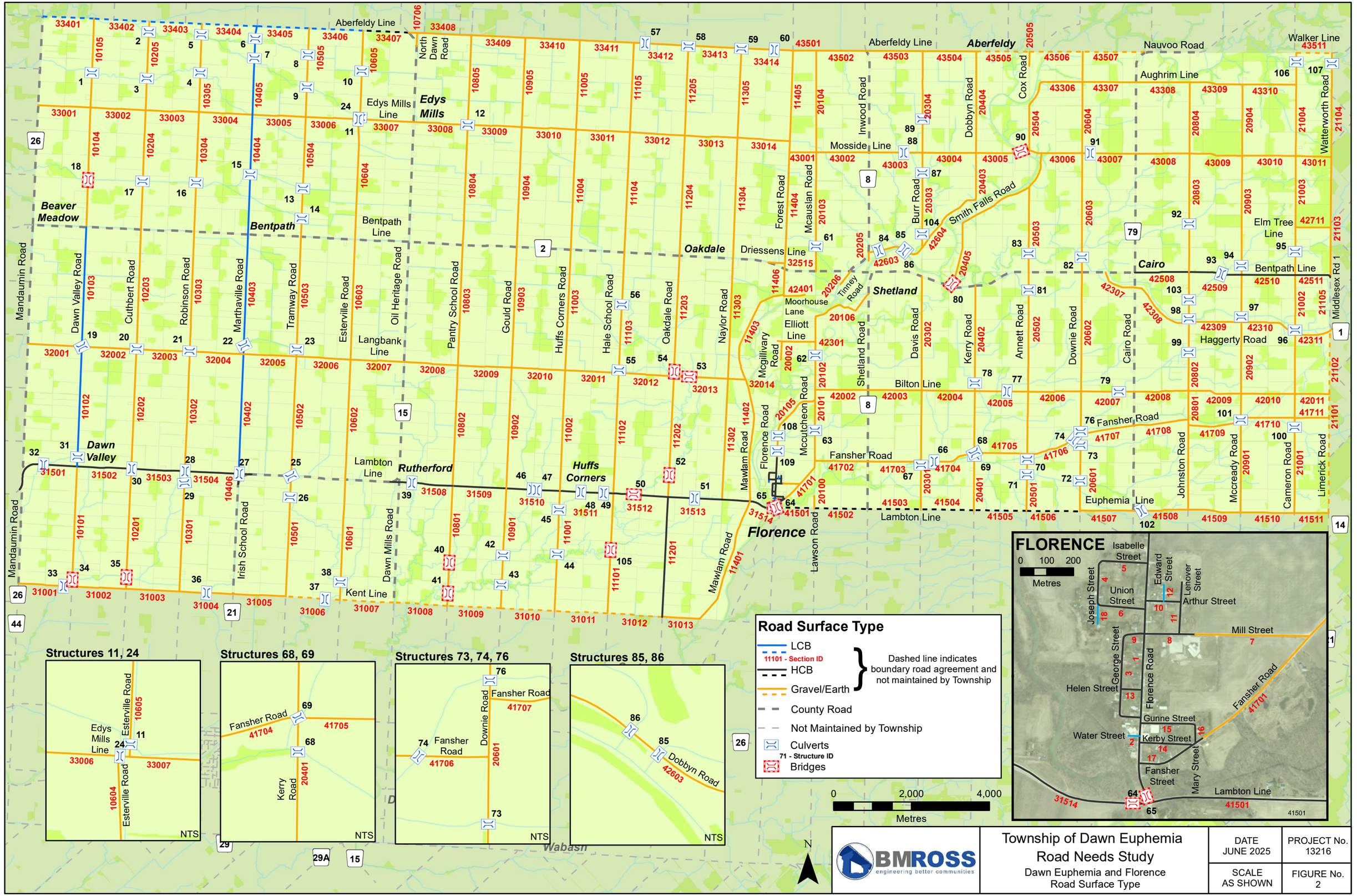
Township of Dawn-Euphemia
Road Management Study

Section Number	Road Name	From	To	Section Length (m)	Roadside Environment	Surface Type	Platform Width (m)	Surface Width (m)	Traffic Range (vpd)	Commercial Traffic	Surface Condition Rating	Structure Condition Rating
42310	Haggerty Road	McCready Road	Cameron Road	1483	Rural	Gravel	7.0	5.1	50-199	Local	6	6.0
42311	Haggerty Road	Cameron Road	Limerick Road	982	Rural	Gravel	7.0	5.5	0-49	Local	7	6.0
42401	Moorhouse Lane	Forest Road	E betwn lot 24/25	577	Rural	Earth	6.0	3.5	0-49	Local	5	3.0
42508	Bentpath Line	Cairo Road	Johnston Road	1391	Rural	HCB - 2 lifts	12.0	6.8	500-999	Local	8	9.0
42509	Bentpath Line	Johnston Road	McCready Road	1353	Rural	HCB - 2 lifts	12.0	6.8	500-999	Local	8	9.0
42510	Bentpath Line	McCready Road	Cameron Road	1380	Rural	HCB - 2 lifts	12.0	6.8	500-999	Local	8	8.5
42511	Bentpath Line	Cameron Road	Watterworth Road	930	Rural	HCB - 2 lifts	12.0	6.8	500-999	Local	8	9.0
42603	Dobbyn Road	Inwood Road	Burr Road	1519	Rural	Gravel	9.0	7.0	0-49	Local	7	6.0
42604	Dobbyn Road	Burr Road	Con 4 E line	1954	Rural	Gravel	9.0	7.0	0-49	Local	7	6.0
42711	Elm Tree Line	Cameron Road	Watterworth Road	904	Rural	Earth	6.0	4.0	0-49	Local	4	1.0
43001	Mosside Line	Forest Road	McAuslan Road	687	Rural	Gravel	9.0	7.0	0-49	Local	8	7.0
43002	Mosside Line	McAuslan Road	Inwood Road	1357	Rural	Gravel	9.0	7.0	0-49	Local	8	7.0
43003	Mosside Line	Inwood Road	Burr Road	1374	Rural	Gravel	9.0	7.0	50-199	Local	8	7.0
43004	Mosside Line	Burr Road	Dobbyn Road	1371	Rural	Gravel	9.0	7.0	0-49	Local	8	7.0
43005	Mosside Line	Dobbyn Road	Aughrim Road	1376	Rural	Gravel	9.0	7.0	50-199	Local	8	7.0
43006	Mosside Line	Aughrim Road	Downie Road	1374	Rural	Gravel	9.0	7.0	50-199	Local	8	7.0
43007	Mosside Line	Downie Road	Cairo Road	1378	Rural	Gravel	9.0	7.0	50-199	Local	8	7.0
43008	Mosside Line	Cairo Road	Johnston Road	1376	Rural	Gravel	7.0	5.0	0-49	Local	7	6.5
43009	Mosside Line	Johnston Road	McCready Road	1364	Rural	Gravel	7.0	5.0	0-49	Local	6	5.5
43010	Mosside Line	McCready Road	Cameron Road	1376	Rural	Gravel	7.0	5.0	0-49	Local	7	6.5
43011	Mosside Line	Cameron Road	Watterworth Road	911	Rural	Gravel	8.0	6.0	0-49	Local	8	7.0
43306	Aughrim Line	Aughrim Line	Downie Road	1032	Rural	Gravel	7.0	7.0	0-49	Local	6	5.0
43307	Aughrim Line	Downie Road	Cairo Road	1376	Rural	Gravel	7.0	7.0	0-49	Local	6	5.0
43308	Aughrim Line	Cairo Road	Johnston Road	1377	Rural	Gravel	7.0	7.0	0-49	Local	6	5.0
43309	Aughrim Line	Johnston Road	McCready Road	1359	Rural	Gravel	7.0	7.0	0-49	Local	5	5.0
43310	Aughrim Line	McCready Road	Cameron Road	1381	Rural	Gravel	7.0	7.0	0-49	Local	6	5.0
43501	Aberfeldy Line	Forest Road	McAuslan Road	595	Rural	Gravel	9.0	7.3	50-199	Local	9	8.5
43502	Aberfeldy Line	McAuslan Road	Inwood Road	1288	Rural	Gravel	9.0	7.3	50-199	Local	9	8.5
43503	Aberfeldy Line	Inwood Road	Burr Road	1445	Rural	Gravel	9.0	7.3	50-199	Local	9	8.5

Inventory Summary Sheet
Sorted by Road Section Number

Township of Dawn-Euphemia
Road Management Study

Section Number	Road Name	From	To	Section Length (m)	Roadside Environment	Surface Type	Platform Width (m)	Surface Width (m)	Traffic Range (vpd)	Commercial Traffic	Surface Condition Rating	Structure Condition Rating
43504	Aberfeldy Line	Burr Road	Dobbyn Road	1376	Rural	Gravel	9.0	7.3	50-199	Local	9	8.5
43505	Aberfeldy Line	Dobbyn Road	Cox Road	1366	Rural	Gravel	9.0	7.0	50-199	Local	6	5.0
43506	Aberfeldy Line	Cox Road	Downie Road	1367	Rural	Gravel	8.0	5.8	50-199	Local	7	7.0
43507	Aberfeldy Line	Downie Road	Nauvoo Road	1613	Rural	Gravel	8.0	5.8	50-199	Local	8	8.0
43511	Walker Line	Cameron Road	Watterworth Road	913	Rural	Gravel	7.0	7.0	0-49	Local	7	6.0


Aberfeldy Line
Edys Mills Line
Bentpath Line
Langbank Line
Lambton Line
Kent Line
Mosside Line
Driessens Line
Moorhouse Lane
Elliott Line
Bilton Line
Fansher Road
Euphemia Line
Nauvoo Road
Aughrim Line
Walker Line
Elm Tree Line
Haggerty Road
Smith Falls Road
Tinney Road
Edys
Mills
Beaver Meadow
Bentpath
Oakdale
Aberfeldy
Cairo
Shetland
Rutherford
Huffs Corners
Dawn Valley
Florence
Mandaumin Road
Dawn Valley Road
Cuthbert Road
Robinson Road
Marthaville Road
Tramway Road
Esterville Road
Oil Heritage Road
Pantry School Road
Gould Road
Huffs Corners Road
Hale School Road
Oakdale Road
Naylor Road
Mcgillivary Road
Shetland Road
Davis Road
Kerry Road
Annett Road
Downie Road
Cairo Road
Middlesex Rd 1
Forest Road
Mcauslan Road
Inwood Road
Burr Road
Dobbyn Road
Cox Road
Watterworth Road
North Dawn Road
Irish School Road
Dawn Mills Road
Florence Road
Mcculcheon Road
Mawlam Road
Lawson Road
Johnston Road
Mccready Road
Cameron Road
Limerick Road
Structures 11, 24
Edys Mills Line
Esterville Road
Structures 68, 69
Fansher Road
Kerry Road
Structures 73, 74, 76
Downie Road
Structures 85, 86
Dobbyn Road
Road Surface Type
LCB
11101 - Section ID
HCB
Gravel/Earth
Dashed line indicates boundary road agreement and not maintained by Township
County Road
Not Maintained by Township
Culverts
71 - Structure ID
Bridges
0 2,000 4,000
Metres
FLORENCE
0 100 200
Metres
Isabelle Street
Edward Street
Lenover Street
Union Street
Arthur Street
Joseph Street
Mill Street
George Street
Florence Road
Helen Street
Gunne Street
Water Street
Kerby Street
Fansher Street
Mary Street
Lambton Line
N
NTS
Wabash
BMROSS
engineering better communities
Township of Dawn Euphemia
Road Needs Study
Dawn Euphemia and Florence
Road Surface Type
DATE
JUNE 2025
PROJECT No.
13216
SCALE
AS SHOWN
FIGURE No.
2

APPENDIX C

WATERMAINS

Asset:	Watermains
Inventory:	148 km of watermain 17 hydrants 151 valves 10 system meters 5 master meter pits 414 water services
Anticipated Asset Life Cycle:	The probable life expectancies of watermain sections and peripherals are affected by material and bedding, pipe location, usage, maintenance and construction quality. As this data is tracked over time by the Township, they may find that these assumed expectancies require adjustment. It is anticipated that there may be localized repairs and maintenance work required in order to achieve the probable life expectancy for a given asset. Generally the expected useful life for the components is: 50 to 100 years for watermain (average age of 75 years), about 40 years for hydrants and valves, about 75 years for chambers, about 40 to 100 years for water services (average age of 60 years), about 40 years for water plants and pumping stations, and about 75 years for water storage.
Integration:	The repair and replacement schedules are to be integrated with road work in the same location and other utilities such as hydro, natural gas or cable whenever possible. Where no road work is planned for an area, but watermain work is required, a trench should be cut and the watermain repaired or replaced.
Rehabilitation and Replacement Criteria:	A condition rating between 1 and 5 (5 being in poor condition, 1 being in good condition) will be assigned to each pipe based on the break history, age, size, material and hydraulic requirements of the pipe section. All of the watermain is PVC, and a 90 year expected useful life was used. This rating, along with the expected useful life will be used as a general guide for the expected replacement schedule for a pipe section. Generally a rating of 2 or 3 will indicate that the pipe is about half-way through its expected life or some minor problems have been identified. A rating of 4 or 5 will indicate that the pipe has surpassed its expected life, or more frequent and serious problems are occurring and that replacement is required in the near future. The remaining useful life of the pipe should be used for long term planning and not for prioritizing replacement. The priority for which sections should be replaced first will be as outlined in Section 3.0 of the asset management report. Rehabilitation work will be scheduled once a leak is detected in order to repair the leak. At the time of the leak repair, the exposed pipe section may be visually reviewed to determine whether it is deteriorating faster than projected. The road rehabilitation schedule may accelerate the schedule for replacing a pipe section, if replacement is scheduled in the near future. Or alternatively the pipe replacement schedule may accelerate or delay the road rehabilitation schedule where feasible.
Rehabilitation and Replacement Strategy:	The watermain rehabilitation recommended work will be based on the current condition of the pipe, once it has been exposed by the entity performing the repair. The Township will explore implementing new technology, such as leak detection equipment to aid in the scheduling of rehabilitation activities. As the condition of buried pipes cannot be easily inspected, the Township may use a high pressure cleaning and videotape inspection to determine condition prior to scheduling a replacement. Where the expense of this inspection outweighs the value it would bring to the design of the repair, the Township strategy will instead rely on the break history, age, size and material of the pipe and hydraulic requirements. It is generally expected that full pipe replacement will be used in the case where replacement is warranted. The length of pipe to be replaced may vary depending on roadwork scheduled in the area, and whether the breaks are isolated or not. The Township has completed corrosion protection work for all system valves over the last number of years.
Risks Associated with not Implementing Strategy:	If replacement does not occur in a timely manner, once it is determined to be warranted, the result will be catastrophic failures at unpredictable times. The costs to correct this type of emergency repair or replacement will be higher than a scheduled replacement.
Integrated Asset Priorities:	Road section rehabilitation and reconstruction forecasts are to be compared to forecasts for bridge and underground utility rehabilitation and reconstruction. The co-ordination of projects will occur internally between Township departments. This is not an immediate need, since the first projected watermain replacement is 2086.

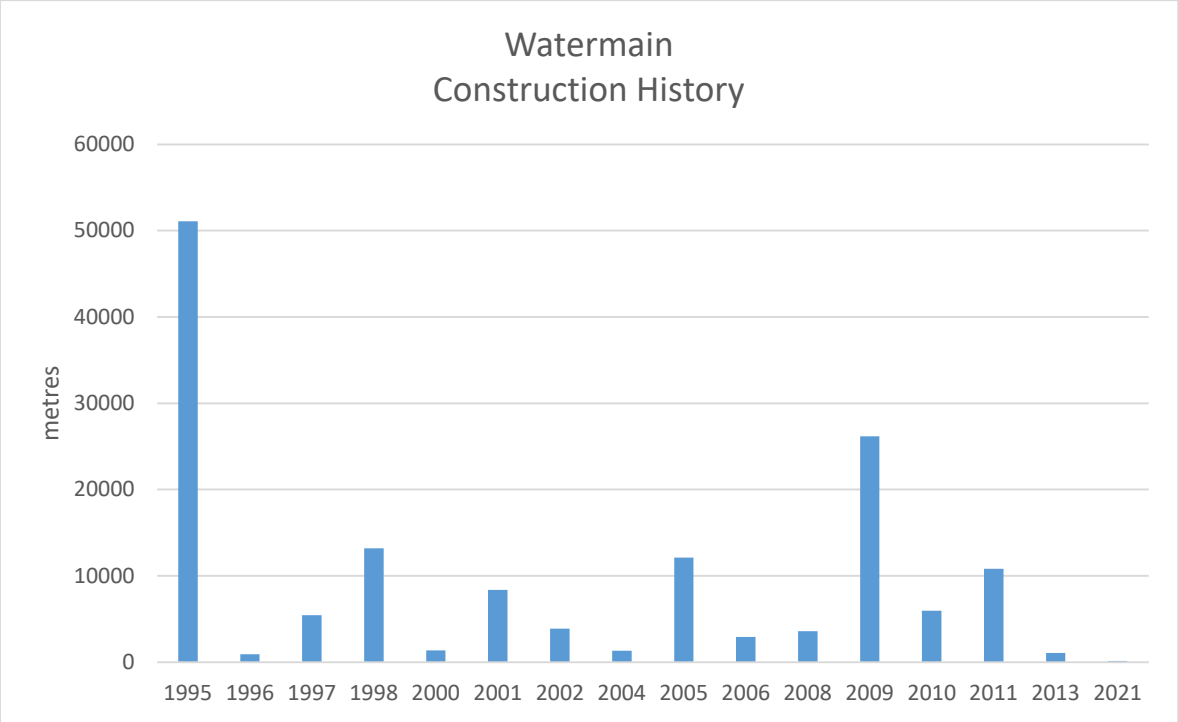
Related Reports on Asset Type:	Township of Dawn-Euphemia Drinking Water System Financial Plan, October 2024
Estimated Cost per year for Strategy Described:	The water system is relatively new and is even-aged. Therefore, there are no watermain replacements required in the next 10 year period. The greatest advantage for the Township is that there is a long time period (60 years) to save for the future watermain repalcement. An annual allowance was calculated that if placed in reserve, and earning interest (5%), would provide for 75% of the future replacement costs. Two values were calculated, one if money was set aside for the entire life of the pipe, and a second starting in 2025, recognizing that only the remaining useful life is left and taking into account that there is already $1.09 million in reserve. Annual allowance (useful life) = $64,174 ($155 / service) Annual allowance (remaining useful life) = $140,500 ($339/service) In the next 10 year period, replacement of system meters is necessary since they are at end-of-life. Accurate metering is important since it is the basis of water user charges, and meters under read as they get older. Replace 13 meters = $22,500 Replace 5 system meters = $40,000
Review Schedule and Procedure:	The Township will keep a list of all breaks, including the location and suspected cause. This list will be reviewed on an annual basis with the list from past years to determine whether a trend or pattern is developing with watermain sections.
Other Information or reference materials:	Water Main Break Rates in the USA and Canada: A Comprehensive Study, Steven Folkman, Ph. D.

Proposed 10 Year Water System Needs

Description	Year Installed	Quantity	Estimated Useful Life	Remaining Useful Life	Age Based Condition	Proposed Year	Current Replacement Cost
150mm system meter	1995	1	15	0	5	2026	$ 8,000
35-50mm water meters	1995	8	20	0	5	2028	$ 20,000
19mm water meters	1995	5	20	0	5	2033	$ 2,500
200mm system meter	2010	1	15	0	5	2027	$ 8,000
100-150mm system meter	2011	2	15	1	5	2032	$ 16,000
100-150mm system meter	2016	1	15	7	3	2032	$ 8,000

Length (km)	Current Replacement Cost (2025)	Netbook (2025)	Annual Depreciation	Annual Flow	Annual Full Flow
148	**$34,994,276**	**$11,409,986**	**$179,053**	**$64,174**	**$140,500**

Annual full flow takes into account that there is currently $1.09 million in reserve. If this money is not retained for long term replacement, the annual full flow would be $198,378.



Diamater (mm)	Length (km)
50	12.1
100	54.9
150	65.6
200	15.7
Total	**148.2**

Type	Watermain ID	Road Section Number	Diameter (mm)	Material	Year Installed	Length (m) or Quantity	Estimated Life	Remaining Useful Life	Proposed Replacement Year	Age Based Condition
Watermain	WAT 1	10004	100	PVC	1998	3683	90	64	2089	1
Watermain	WAT 10	10505	200	PVC	1995	403	90	61	2086	1
Watermain	WAT 100	42504	100	PVC	1995	1405	90	61	2086	1
Watermain	WAT 101	42505	100	PVC	1995	1080	90	61	2086	1
Watermain	WAT 105	20105	50	PVC	1995	732	90	61	2086	1
Watermain	WAT 11	10605	200	PVC	1995	733	90	61	2086	1
Watermain	WAT 113	20302	100	PVC	1996	901	90	62	2087	1
Watermain	WAT 114	10706	150	PVC	1995	314	90	61	2086	1
Watermain	WAT 115	20202	150	PVC	1997	562	90	63	2088	1
Watermain	WAT 116	31514	150	PVC	2005	720	90	71	2096	1
Watermain	WAT 117	20205	100	PVC	1995	547	90	61	2086	1
Watermain	WAT 118	20203	100	PVC	2021	139	90	87	2112	1
Watermain	WAT 119	20206	50	PVC	1995	355	90	61	2086	1
Watermain	WAT 12	10504	100	PVC	2011	3108	90	77	2102	1
Watermain	WAT 120	8	150	PVC	1995	205	90	61	2086	1
Watermain	WAT 13	10503	100	PVC	2011	1048	90	77	2102	1
Watermain	WAT 14	33007	50	PVC	1995	655	90	61	2086	1
Watermain	WAT 15	33008	50	PVC	1995	633	90	61	2086	1
Watermain	WAT 16	10705	150	PVC	1995	1979	90	61	2086	1
Watermain	WAT 17	10704	150	PVC	1995	3067	90	61	2086	1
Watermain	WAT 18	10804	50	PVC	2001	887	90	67	2092	1
Watermain	WAT 19	33009	50	PVC	1995	420	90	61	2086	1
Watermain	WAT 2	10005	100	PVC	1998	2272	90	64	2089	1
Watermain	WAT 20	10905	200	PVC	1995	2293	90	61	2086	1
Watermain	WAT 21	10904	200	PVC	1995	3073	90	61	2086	1
Watermain	WAT 22	32509	150	PVC	2009	1391	90	75	2100	1
Watermain	WAT 23	32508	150	PVC	2009	1385	90	75	2100	1
Watermain	WAT 24	32507	150	PVC	2009	1392	90	75	2100	1
Watermain	WAT 25	32506	150	PVC	2009	1384	90	75	2100	1
Watermain	WAT 26	32505	150	PVC	2009	1350	90	75	2100	1
Watermain	WAT 27	32504	150	PVC	2009	1375	90	75	2100	1
Watermain	WAT 28	32503	150	PVC	2009	1374	90	75	2100	1
Watermain	WAT 29	32502	150	PVC	2009	1399	90	75	2100	1
Watermain	WAT 3	10105	50	PVC	2005	2295	90	71	2096	1
Watermain	WAT 30	32501	150	PVC	2009	1310	90	75	2100	1
Watermain	WAT 31		50	PVC	2004	1301	90	70	2095	1
Watermain	WAT 32	10802	100	PVC	2001	1185	90	67	2092	1
Watermain	WAT 33	10803	100	PVC	2001	3085	90	67	2092	1
Watermain	WAT 34	32008	50	PVC	2001	453	90	67	2092	1
Watermain	WAT 35	10702	150	PVC	1995	3092	90	61	2086	1
Watermain	WAT 36	10703	150	PVC	1995	3104	90	61	2086	1
Watermain	WAT 37	10303	100	PVC	2013	470	90	79	2104	1
Watermain	WAT 38	10302	100	PVC	2010	799	90	76	2101	1
Watermain	WAT 39	32003	50	PVC	2010	377	90	76	2101	1
Watermain	WAT 4	10205	100	PVC	1998	2293	90	64	2089	1
Watermain	WAT 40	10201	100	PVC	2010	703	90	76	2101	1
Watermain	WAT 41	10202	100	PVC	2010	3065	90	76	2101	1
Watermain	WAT 42	10203	100	PVC	2010	457	90	76	2101	1
Watermain	WAT 43	10101	100	PVC	2010	542	90	76	2101	1
Watermain	WAT 44	10102	150	PVC	2009	3084	90	75	2100	1
Watermain	WAT 45	10103	150	PVC	2009	3074	90	75	2100	1
Watermain	WAT 5	10204	100	PVC	1998	1782	90	64	2089	1
Watermain	WAT 50	10401	100	PVC	2011	3104	90	77	2102	1
Watermain	WAT 51	31004	50	PVC	2011	928	90	77	2102	1
Watermain	WAT 52	10801	100	PVC	2000	1358	90	66	2091	1
Watermain	WAT 53	31502	150	PVC	2009	1409	90	75	2100	1
Watermain	WAT 54	31503	150	PVC	2009	1365	90	75	2100	1
Watermain	WAT 55	31504	150	PVC	2009	1390	90	75	2100	1
Watermain	WAT 56	31505	150	PVC	2009	1344	90	75	2100	1
Watermain	WAT 57	31506	150	PVC	2009	1394	90	75	2100	1
Watermain	WAT 58	31507	150	PVC	2001	1390	90	67	2092	1
Watermain	WAT 59	31508	150	PVC	2001	1361	90	67	2092	1
Watermain	WAT 6	33003	50	PVC	1998	557	90	64	2089	1

Type	Watermain ID	Road Section Number	Diameter (mm)	Material	Year Installed	Length (m) or Quantity	Estimated Life	Remaining Useful Life	Proposed Replacement Year	Age Based Condition
Watermain	WAT 60	31007	50	PVC	2009	747	90	75	2100	1
Watermain	WAT 61	10701	150	PVC	1997	3074	90	63	2088	1
Watermain	WAT 62	11001	100	PVC	2006	1013	90	72	2097	1
Watermain	WAT 63	11201	100	PVC	2006	1017	90	72	2097	1
Watermain	WAT 64	31514	150	PVC	2005	728	90	71	2096	1
Watermain	WAT 65	31509	150	PVC	2005	1381	90	71	2096	1
Watermain	WAT 66	31510	150	PVC	2005	1379	90	71	2096	1
Watermain	WAT 67	31511	150	PVC	2005	1364	90	71	2096	1
Watermain	WAT 68	31512	150	PVC	2005	1395	90	71	2096	1
Watermain	WAT 69	31513	150	PVC	2005	1410	90	71	2096	1
Watermain	WAT 7	33004	100	PVC	1998	513	90	64	2089	1
Watermain	WAT 70	11402	100	PVC	2006	877	90	72	2097	1
Watermain	WAT 71	20100	100	PVC	2011	327	90	77	2102	1
Watermain	WAT 72		100	PVC	2011	1430	90	77	2102	1
Watermain	WAT 73		50	PVC	2011	869	90	77	2102	1
Watermain	WAT 74	41501	100	PVC	2008	976	90	74	2099	1
Watermain	WAT 75	41502	100	PVC	2008	1355	90	74	2099	1
Watermain	WAT 76	41503	100	PVC	2013	570	90	79	2104	1
Watermain	WAT 77	20201	100	PVC	2008	1236	90	74	2099	1
Watermain	WAT 78	20202	100	PVC	1997	1802	90	63	2088	1
Watermain	WAT 79	20202	100	PVC	1995	2467	90	61	2086	1
Watermain	WAT 8	10405	150	PVC	1995	2277	90	61	2086	1
Watermain	WAT 80	41702	100	PVC	1995	924	90	61	2086	1
Watermain	WAT 81	20102	150	PVC	1995	3295	90	61	2086	1
Watermain	WAT 82	20101	150	PVC	1995	276	90	61	2086	1
Watermain	WAT 83	20103	150	PVC	1995	3028	90	61	2086	1
Watermain	WAT 84	20104	150	PVC	1995	492	90	61	2086	1
Watermain	WAT 85	42301	50	PVC	1995	845	90	61	2086	1
Watermain	WAT 86	32012	100	PVC	2005	1422	90	71	2096	1
Watermain	WAT 87	32013	100	PVC	2002	793	90	68	2093	1
Watermain	WAT 88	11101	100	PVC	1998	947	90	64	2089	1
Watermain	WAT 89	11101	100	PVC	1998	1129	90	64	2089	1
Watermain	WAT 9	10404	150	PVC	1995	3113	90	61	2086	1
Watermain	WAT 90	11203	100	PVC	2002	3092	90	68	2093	1
Watermain	WAT 91	32510	200	PVC	1995	1365	90	61	2086	1
Watermain	WAT 92	32511	200	PVC	1995	1379	90	61	2086	1
Watermain	WAT 93	32512	200	PVC	1995	1449	90	61	2086	1
Watermain	WAT 94	32513	200	PVC	1995	1358	90	61	2086	1
Watermain	WAT 95	32514	200	PVC	1995	901	90	61	2086	1
Watermain	WAT 96	32515	200	PVC	1995	475	90	61	2086	1
Watermain	WAT 97	42501	200	PVC	1995	805	90	61	2086	1
Watermain	WAT 98	42502	200	PVC	1995	1426	90	61	2086	1
Watermain	WAT 99	42503	150	PVC	1995	1330	90	61	2086	1
100-200mm system meter					2011	2	15	2	2027	5
100-200mm system meter					2010	1	15	1	2026	5
100-200mm system meter					2016	1	15	7	2032	3
Meter pit					1995	5	75	46	2071	1
35-50mm water meters					1995	8	20	0	2016	5
35-50mm water meters					2020	2	20	16	2041	1
100-200mm water meters					1995	1	15	0	2011	5
25mm water meters					2020	64	20	16	2041	1
19mm water meters					2020	345	20	16	2041	1
19mm water meters					1995	5	20	0	2016	5

N

0 1 2 4
KILOMETRES

FLORENCE

0 150 300
METRES

Legend

- Water Valve
- Hydrant
- Meter Pit
- Chlorinator
- Watermain
- Roads
- Dawn-Euphemia Boundary
- Parcels

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TOWNSHIP OF DAWN-EUPHEMIA

ASSET MANAGEMENT PLAN

EXISTING WATERMAINS

DATE	PROJECT No.
JUNE 12, 2025	13216
SCALE	FIGURE No.
AS SHOWN	1

N

BICKFORD LINE
STANLEY LINE
MCCALLUM LINE
BURMAN LINE
SMITH LINE
HOLT LINE
TULLOCH LINE
KERR LINE
LAMBTON LINE
CHARLEMONT LINE
KENT LINE
ABERFELDY LINE
EDYS MILLS LINE
LANGBANK LINE
BENTPATH LINE
MOSSIDE LINE
DRIESSENS LINE
ELLIOTT LINE
BILTON LINE
FANSHER ROAD
DANKEY LINE
MOORHOUSE LANE

FAIRWEATHER ROAD
PLOWING MATCH ROAD
TILE YARD ROAD
ESTERVILLE ROAD
NORTH DAWN ROAD
KELLY ROAD
CROOKED ROAD
GYPSIE FLATS ROAD
BLACK ASH ROAD
WANSTEAD ROAD
OAKDALE ROAD
SUTORVILLE ROAD
LITTLE IRELAND ROAD
EBENEZER ROAD
COX ROAD
AUGHRIM LINE
BURR ROAD
DOBBYN ROAD
SMITH FALLS ROAD
FOREST ROAD
MCAUSLAN ROAD
IWWOOD ROAD
TINNEY ROAD
PLOWSLEY ROAD
NAYLOR ROAD
DAWN VALLEY ROAD
MANDAUMIN ROAD
CUTHBERT ROAD
MARTHAVILLE ROAD
OIL HERITAGE ROAD
TRAMWAY ROAD
GOULD ROAD
HUFFS CORNERS ROAD
HALE SCHOOL ROAD
PANTRY SCHOOL ROAD
ROBINSON ROAD
IRISH SCHOOL ROAD
DAWN MILLS ROAD
MCGILLIVARY ROAD
DAVIS ROAD
SHIELAND ROAD
KERRY ROAD
ANNETT ROAD
MCCUTCHEON ROAD
MAWLAM ROAD
LAWSON ROAD
FLORENCE ROAD
ZONE 1 ROAD
ZONE 5 ROAD
JOSEPH STREET
GEORGE STREET
MILL STREET
GUNNE STREET

26
15
2
8

Legend

- Hydrant
- Watermain
- Roads
- 90m Hydrant Buffer
- 180m Hydrant Buffer
- Dawn-Euphemia Boundary
- Parcels

0 1 2 4
KILOMETRES

FLORENCE

0 150 300
METRES

ISABELLE STREET
JOSEPH STREET
UNION STREET
ARTHUR STREET
LENOXER STREET
MILL STREET
FANSHER ROAD
GEORGE STREET
GUNNE STREET
WATER STREET
KERBY STREET
FANNER STREET
LAMBTON LINE
FLORENCE ROAD

Fire Protection	Number	Percentage of Properties
Properties within 90m of a hydrant	139	7.1%
Properties within >90m to 180m of a hydrant	86	4.4%
Properties within >180m of a hydrant	1745	88.6%

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TOWNSHIP OF DAWN-EUPHEMIA
ASSET MANAGEMENT PLAN
EXISTING WATERMAINS FIRE FLOW

DATE JUNE 12, 2025
PROJECT No. 13216
SCALE AS SHOWN
FIGURE No. 2

N

Legend

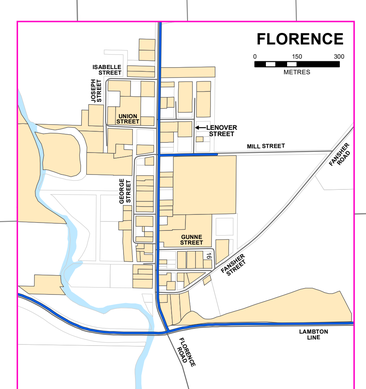
- Dawn-Euphemia Boundary
- Dawn-Euphemia Water Customers
- Watermain

Water Customers in other Townships

- Chatham-Kent (9)
- St. Clair (13)

Potable Water Network	Number	Percent of Properties
Serviced Properties	381	19.3%

OIL SPRINGS LINE
OIL SPRINGS
CENTRE STREET
GUM BED LINE
KELLY ROAD
GYPSIE FLATS ROAD
BLACK ASH ROAD
WANSTEAD ROAD
CAMPBELL LINE
SUTORVILLE ROAD
LITTLE IRELAND ROAD
EBENEZER ROAD
FIELDS LINE
OLD WALNUT ROAD
WATERWORKS ROAD
BICKFORD LINE
ABERFELDY LINE
COX ROAD
AUGHRIM LINE
STANLEY LINE
MANDAUMIN ROAD
EDYS MILLS LINE
EDYS MILLS
FOREST ROAD
INWOOD ROAD
MCCALLUM LINE
MOSSIDE LINE
DOBBYN ROAD
MCAUSLAN ROAD
BURR ROAD
SMITH FALLS ROAD
BURMAN LINE
MARTHAVILLE ROAD
OIL HERITAGE ROAD
OAKDALE
BENTPATH LINE
TINNEY ROAD
SHETLAND
TAGGERTY ROAD
NAYLOR ROAD
FLORENCE ROAD
SMITH LINE
ELLIOTT LINE
ANNETT ROAD
DOWNIE ROAD
CAIRO ROAD
HOLT LINE
LANGBANK LINE
BILTON LINE
TULLOCH LINE
DAWN VALLEY ROAD
CUTHBERT ROAD
ROBINSON ROAD
TRAMWAY ROAD
ESTERVILLE ROAD
PANTRY SCHOOL ROAD
GOULD ROAD
HUFFS CORNERS ROAD
HALE SCHOOL ROAD
OAKDALE ROAD
MANILAM ROAD
MCCUTCHEON ROAD
SHETLAND ROAD
DAVIS ROAD
KERRY ROAD
FANSHER ROAD
FLORENCE
KERR LINE
RUTHERFORD
LAMBTON LINE
EUPHEMIA LINE
MAIN LINE
CHARLEMONT LINE
KENT LINE
DANKEY LINE
BRICK ROAD
ZONE 1 ROAD
ZONE 2 ROAD
ZONE 6 ROAD
ZONE 7 ROAD
IRISH SCHOOL ROAD
DAWN MILLS ROAD
CIDER MILL LINE



0 2 4
KILOMETRES

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TOWNSHIP OF DAWN-EUPHEMIA
ASSET MANAGEMENT PLAN
WATER DISTRIBUTION SYSTEM AND SERVICED PROPERTIES

DATE	PROJECT No.
JUNE 30, 2025	13216
SCALE	FIGURE No.
AS SHOWN	3

APPENDIX D

STORMWATER

N

0 1 2 4
KILOMETRES

Properties		Buildings	
Total number of properties in estimated regional floor limits	1490	Total number of buildings in estimated regional floor limits	766
Percentage of properties in municipality outside of estimated regional flood limits	25%	Percentage of buildings in municipality outside of estimated regional flood limits	61%

FLORENCE

0 150 300
METRES

Legend

- Buildings
- Roads
- Watercourse
- Estimated Regional Flood Limits
- Dawn-Euphemia Boundary
- Parcels

SCRCA Flood Limit (Riggs Engineering, 2009).
This map delineates the regional flood hazard area, equivalent to the extent of flooding expected under Hurricane Hazel conditions.

BMROSS engineering better communities

TOWNSHIP OF DAWN-EUPHEMIA
ASSET MANAGEMENT PLAN
ESTIMATED REGIONAL FLOOD LIMITS

DATE	PROJECT No.
MAY 16, 2025	13216
SCALE	FIGURE No.
AS SHOWN	

APPENDIX E

FACILITIES

Dawn Fire Hall - Component Work Summary

Component	Description of Work	Work Priority	Year of Work	Status	Probable Cost
Flooring	Replace flooring in west hall area	Low	6 to 10 Years	Pending	$15,000
Generator	Replace generator	Low	6 to 10 Years	Pending	$35,000
				Total Pending Work:	$50,000

Rutherford PW Depot - Component Work Summary

Component	Description of Work	Work Priority	Year of Work	Status	Probable Cost
Exterior Windows	Replace windows	As Required	6 to 10 Years	Pending	$5,000
				Total Pending Work:	$5,000

Shetland Library - Component Work Summary

Component	Description of Work	Work Priority	Year of Work	Status	Probable Cost
General HVAC	Replace heating system	Low	6 to 10 Years	Pending	$12,000
Exterior Windows	Replace the windows	As Required	1 to 5 Years	Pending	$15,000
Exterior Doors	Replace doors	As Required	6 to 10 Years	Pending	$10,000
				Total Pending Work:	$37,000

Asset:	Township Owned Facilities
Inventory:	6 major structures, a municipal office, a fire hall, 2 public works buildings, a community center and a library.
Anticipated Asset Life Cycle:	Life cycles can vary from 10 to 60 years. A mechanical replacement may be in the 10 to 30 year range, a roof membrane in the 20 year range, and the building superstructure in the 60 year range. These life cycles assume adequate maintenance is provided throughout the life of the various components. Differences in operation conditions or usage load will cause variations in the actual life of individual components
Integration:	Individual building components will need to be reviewed to different criteria. Depending on the work required contracts will be per individual building, or per individual component at multiple buildings to take advantage of any economies of scale. Consideration is to be given to minimize the disruption of the use of a building asset over time.
Rehabilitation and Replacement Criteria:	A Facility Condition Index (FCI) will be calculated to each facility. The FCI is the ratio of total (current replacement value - deferred maintenance costs) : current replacement value of the facility asset. The Township will use an aggregate of all deferred maintenance costs for a given point in time for a facility to calculate the FCI. This is as opposed to calculating an FCI for each individual facility component. FCI Score: 95-100 is good (green), 90-95 is fair (yellow), 70-90 is poor (orange), and less than 70 is critical (red) An FCI less than 70 will be considered in poor condition, and an FCI greater than 95 will be considered in good condition. Fair condition would be an FCI of 90 to 94. Once an FCI decreases below 95 rehabilitation work will be scheduled. If a facility has an FCI less than 90 and the Level of Service being provided in a concern or the Risk scores are poor the Township will review the over-all suitability of the facility to decide whether rehabilitation is still the most appropriate approach, or whether replacement is required. A facility with an FCI less than 70 and the LOS or Risk score is high, then it is suggested that replacement be considered.
Rehabilitation and Replacement Strategy:	The Township will assess its facilities and determine a priority list for recommended work. This may not include all recommended work at a single facility, but a grouping of similar work at multiple facilities. For example if it is determined that the furnace and the roof require work at one facility and the furnace and the windows require work at another, but the furnace work at both is more critical. The furnace work may be given a higher priority than the other work at either facility and, as the work is similar, may be grouped into one contract. Other external factors which may impact priority or even the recommended work are changes to energy costs, new technology and changes to safety standards. In addition for facilities, changes or new regulations, such as the Accessibility for Ontarians with Disabilities Act (AODA) which has set minimum accessibility standards, may require alterations to some facilities and outdoor public areas.
Risks Associated with not Implementing Strategy:	Increased deterioration of buildings, health and safety impacts to staff and the public, decreases in operational efficiency, increased operating costs, accelerated depriciation of building assets.
Integrated Asset Priorities:	Replacement and rehabilitation of the asset or asset component shall be based on their actual condition. Where the work is not an emergency repair, it will be scheduled to provided minimal disruption to the users of the facility. Where multiple facility assets require similar rehabilitation work, the Township may decide to combine multiple sites into one contract to take advantage of any economies of scale.
Related Reports on Asset Type:	
Estimated Cost per year for Strategy Described:	There are no projected capital needs in the 10 year period. An annual value of $15,000 will be budgeted for heating & cooling and retrofitting of light fixtures. Suggest putting aside $100,000 in 2026, or a portion thereof for 5 years, for a future roof repair.
Review Schedule:	Facilities with Township staff onsite will be reviewed as part of regular maintenance activities, facilities without Township staff will rely on the regular user groups to notify the Township of any observed defects. A more formal review of all Township facilities will be completed by Township staff every 5 years for inclusion in the Asset Management Plan.
Other Information or reference materials:	Accessibility for Ontarians with Disabilities Act - Government of Ontario www.mcss.gov.on.ca/en/mcss/programs/accessibility/index.aspx

Township of Dawn - Euphemia

Asset Register for Township Buildings

Building ID	Building	Value	Year Built	Remaining Life	Expected Useful Life	Location	Description	Replacement Estimate (cost or '08 MPAC)	Age Based Condition
B1	Dawn Fire Hall	$146,300.00	1990	15	50	4596 Lambton Line	Agri-Urban Buildings Inc. Construction	$1,704,243.00	3
B1a	Dawn Fire Hall	$53,350.00	2013	38	50	4596 Lambton Line	Storage Addition		1
B2	Rutherford Municipal Office	197,150.00	1980	5	50	4591 Lambton Line	JS Highgate Construction	$1,284,469.00	5
B2a	Office Roof	16,400.00	2009	9	25		MBP Steel Roof - Deline Constr		3
B2b	Emergency Generator	17,000.00	1999	-16	10		Sommers Motor Gen - 3ph diesel		5
B3	Shetland Library	12,300.00	1949	-26	50	1279 Shetland Road	Shetland Library	$329,805.00	5
B3a	Roof Replacement	4,575.00	2010	10	25		Steel Roof - J D Renovations		3
B5	Rutherford Park, Picnic Shelter	1,150.00	1991	-9	25	Township Park, Rutherford	Volunteer Labour, material cost only		5
B23	FFG Picnic Shelter	13,400.00	2002	2	25		Florence Fairgrounds Picnic Shelter	$21,132.50	5
B21	FFG Outdoor Ice Rink	10,900.00	2004	29	50		Florence Fairgrounds Ice Rink	$14,842.50	3
B20	FFG Storage Shed	29,700.00	1985	10	50		Florence Fairgrounds Storage Shed	$66,975.00	5
B20a	Storage Shed Floor	8,200.00	2010	10	25		Concrete Floor & Electrical		3
B22	FFG Optimist Ball Booth	14,300.00	1983	8	50		Florence Fairgrounds Ball Booth	$34,831.25	5
B24	FFG Ball Diamond Dugouts	2,600.00	1981	-19	25		Florence Fairgrounds Ball Dugouts	$7,383.75	5
B7	D-E Community Centre	1,573,550.00	2010	35	50	6213 Mill Street, Florence	Dawn-Euphemia Community Centre	$4,214,585.00	1
B8	Mechanical / HVAC Systems	71,700.00	2010	5	20		Mechanical / HVAC Systems		5
B8a	Land Improvments	140,900.00	2010	5	20		Land Improvments		5
B9	Hardwood Flooring	48,000.00	2010	5	20		Hardwood Flooring		5
B13	Storage Garage	5,400.00	1940	-35	50	4590 Lambton Line	Clay Block c/w pitched roof	$95,762.50	5
B13a	OH Door	3,375.00	2005	-5	15		Door & installing new sectional O.H. Door		5
B14	Rutherford Equipment Depot	24,000.00	1970	-5	50	4590 Lambton Line	Original Block Building - flat roof	$1,522,115.00	5
B14a	Garage Addition	54,750.00	1986	11	50		Added 2 bays & pitched roof		5
B14b	Radiant Heaters	3,210.00	2005	-5	15		added radiant heaters to original bays		5
B15	Salt Shed - Rutherford	8,600.00	1995	20	50	4584 Lambton Line	Rutherford Salt and Sand Shed	$14,010.00	3
B15a	Salt Shed Rennovations	10,710.00	2005	-5	15		Salt Shed Rennovations		5
B16	Cairo Equipment Depot	34,900.00	1970	-5	50	1345 Cairo Road	Cairo Equipment Depot	$2,444,664.00	5

Building ID	Building	Value	Year Built	Remaining Life	Expected Useful Life	Location	Description	Replacement Estimate (cost or '08 MPAC)	Age Based Condition
B16a	Garage Addition	48,600.00	1981	6	50		Improvements		5
B16b	Cairo Garage Roof	7,995.00	2001	-9	15		Cairo Garage Roof		5
B16c	Radiant Shop Heaters	7,215.00	2003	-7	15		New Furnace		5
B17	Salt Shed - Cairo	44,950.00	1993	18	50	1345 Cairo Road	Cairo Salt and Sand Shed - Public Works	$77,312.50	3
B17a	Lean-to addition	16,900.00	2005	30	50		Cairo Salt Shed - Lean-To		3

Buildings that had a condition assessment in 2024. Replacment costs for these structures based on component unit prices in 2025 dollars. Other facility replacement cost was calculated by inflating 2016 report value by 1.25 (CPI change from 2016 to 2025)

APPENDIX F

FLEET

Asset:	Township owned Vehicles
Inventory:	4 light duty vehicles, 5 fire vehicles, 4 heavy duty vehicles, 5 graders, 2 tractors, 1 backhoe
Anticipated Asset Life Cycle:	Varies depending on principal use area and vehicle type. Pickups and cars - about 9 years, heavy duty vehicles - about 20 years, fire vehicles - about 20 years, graders - about 40 years, backhoes - about 10 years, tractors - about 10 years
Integration:	Will need to conform with changes to environmental and provincial regulations as well as any operational changes.
Rehabilitation and Replacement Criteria:	Non-emergency repairs or replacements will be scheduled based on use, depreciation, fuel use and costs, increasing repair costs, insurance costs, etc. Vehicles will undergo routine maintenance, at minimum on an annual basis. Emergency repairs will be scheduled on an as needed bases.
Rehabilitation and Replacement Strategy:	Repair costs will be compared to replacement cost, generally a vehicle will be scheduled for replacement once repair costs exceed 30% of their replacement cost. Actual usage will be reviewed prior to scheduling replacement to determine whether replacement is warranted. Graders are having major overhauls instead of replacing them at the end of the estimated life. This will occur until parts become unavailable or the superstructure has failed. This explains why one grader in the inventory has exceeded the useful life. Four graders are even aged, one is new, and there is merit to continuing to replacing them in the next 5-10 years as possibly to avoid large capital costs if they all fail around the same time. Leasing, seasonal rental, purchase of refurbished units, or refurbishing owned units and the advanatages and disadvantages of contracting services performed by a fleet vehicle to a third party, will be examined prior to performing a replacement.
Risks Associated with not Implementing Strategy:	Costs to operate the vehicle are expected to increase overtime, with increasing maintenance time being required resulting in delays to work requiring those vehicles, resulting in increased hourly wage costs and reduced productivity.
Integrated Asset Priorities:	Integration with other asset groups, involves ensuring the fleet size and condition is adequate to maintain the other assets.
Related Reports on Asset Type:	
Estimated Cost per year for Strategy Described:	The 10 year annual average replacement costs = $493,000
Review Schedule:	Vehicle maintenance logs should be reviewed once per year to determine whether the vehicle needs any major repair work, or requires replacment in the next capital budget. The Township plans to create a replacement schedule which will be revised every 5 years, as part of the asset management report.
Other Information or reference materials:	

TOWNSHIP OF DAWN EUPHEMIA
CAPITAL FLEET REPLACEMENT SCHEDULE AND COST PROJECTION

Ref. No.	Next replacement year	2025	2026	2027	2028	2029	2030	2031	2032	2033	2034
W10	2034										80
W30	2024	80									
W3	2027			400							
W27	2040										
W11	2032								400		
W14	2026		400								
W6 *	N/A										
W7	2028				500						
W8	2029					500					
W9	2031							500			
W10	2046	500									
W28	2033									150	
W29	2033									150	
W16	2033									150	
W22	2029					150					
W23**	N/A										
W24	2021	15									
W21	2029					250					
W25	2033									325	
W20	2028				300						
W31	2043										
W32	2029					80					
W34**	N/A										

	Years	2025	2026	2027	2028	2029	2030	2031	2032	2033	2034
	Annual Expenditure	$595	$400	$400	$800	$980	$0	$500	$400	$775	$80
	10 year Average	**$493**									
	Reserves with $										

Notes: Replacement costs are in 2025 dollars based on the information supplied by the Township.

TOWNSHIP OF DAWN EUPHEMIA
CAPITAL FLEET REPLACEMENT SCHEDULE AND COST PROJECTION

Equipment	Year	Make	Hrs/year	Service Life	Life Cycle (yr)	Remaining Life Expectancy	Replacement Cost ($1000)	Annual Capital Cost ($1000)	Age Based Condition
Pick-up	2024	Chevroolet	600	8400	9	9	80	8.89	10.0
Pick-up	2014	Ford	600	8400	9	-1	80	8.89	1.0
Dump Truck	2006	Volvo	600	8400	20	2	400	20.00	1.0
Dump Truck	2019	Freightliner.	600	8400	20	15	400	20.00	7.5
Dump Truck	2011	Volvo	600	6400	20	7	400	20.00	3.5
Dump Truck			REPLACEMENT TO BE PURCHASED 2026, EXPECT DELIVERY 2027						
Grader	1987	J.D.	800	16000	28	-9	500	17.86	1.0
Grader	1989	Champion	800	16000	38	3	500	13.16	0.8
Grader	1990	J.D.	800	16000	38	4	500	13.16	1.1
Grader	1992	Champion	800	16000	38	6	500	13.16	1.6
Grader	2025	CAT	800	16000	20	20	500	25.00	10.0
Tractor (Rental)	2022	J.D. 6115M	800	8000	10	8	150	15.00	8.0
Tractor (Rental)	2022	J.D. 6115M	800	8000	10	8	150	15.00	8.0
Backhoe	2022	Case	700	6000	10	8	150	15.00	8.0
Flat Bed	1990	Int.	500	1000	38	4	150	3.95	1.1
Step Van	1994	GMC	750	7500	15	-15	40	2.67	1.0
7000gvw Trailer	2005	R. Varsava	200	10000	15	-4	15	1.00	1.0
SA Dump (Tanker Dump)	1990	Int.	250	8400	38	4	250	6.58	1.1
Fire Pumper	2012	Fort Garry - Int'l chassis	200		20	8	325	16.25	4.0
Rescue Van	2007	Fort Garry - Int'l Chassis	200		20	3	300	15.00	1.5
Fire Tanker	2022		150		20	18	350	17.50	9.0
Pick-up	2019	Dodge	600	8400	9	4	80	8.89	4.4
S/A Dump	1995	Int.	150	8400	28	-1	10	0.36	1.0

Capital cost ($,000)	**$5,830**	**$277**

Added 8 years to Life Cycle due to equipment being referbishment or and applied N/A for equipment to not be replaced

APPENDIX G

ASSET GROUP FINANCIAL AND LETTER GRADE SCORING METHODS

Appendix G - Asset Type Score Calculation

Bridges

Asset Type Score = BCI/100 * 20 + (1 - LOS/10) * 20 + (1 - Risk/10) * 20 + Financial/10 * 40

Roads

Asset Type Score = CR/10 * 20 + (1 - LOS/10) * 20 + (1 - Risk/10) * 20 + Financial/10 * 40

Watermains

Asset Type Score = (1-CR/6) * 20 + (1 - LOS/10) * 20 + (1 - Risk/10) * 20 + Financial/10 * 40

Facilities

Asset Type Score = FCI/100 * 20 + (1 - LOS/10) * 20 + (1 - Risk/10) * 20 + Financial/10 * 40

Fleet

Asset Type Score = ((CR/10 * 20 + Financial/10 * 40) / 60) * 100

Financial Score

% Financed = 100 x (Yearly Funding Available)/(Yearly Amount Required to Address Needs)	Financial Score
95-100	10
85-94	9
80-84	8
75-79	7
70-74	6
60-69	5
50-59	4
40-49	3
30-39	2
<30	1

Letter Grades

Asset Type Numerical Score	Asset Type Letter Grade
90-100	A+
85-89	A
80-84	A-
75-79	B+
70-74	B
68-70	B-
64-67	C+
60-63	C
55-59	C-
50-54	D
0-49	E