PBX ENGINEERING

TECHNICAL REPORT

2025 Traffic Signal Assessment Updates

Town of Tecumseh

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Executive Summary

The assessment identified several intersections where signal replacement is urgently required due to aging equipment, reliability concerns, or compliance with current safety and accessibility standards. These locations represent the most significant risks to operational performance and public safety, and immediate replacement is strongly recommended. Addressing these intersections first will reduce the likelihood of failures, minimize long-term maintenance costs and improve safety for all road users. The table below summarizes the estimated costs for immediate replacements, along with projected totals over 5 and 10 years to support budget planning and prioritization.

	Estimated Cost	Intersections
Immediate Replacements	$917,780	• Tecumseh Rd E & Lesperance Rd • Lesperance Rd & Arbour St • Tecumseh Rd E & Shawnee Rd
5-Year Replacements	$762,000	• Manning Rd & Tecumseh Rd E • Lesperance Rd & McNorton St • Lesperance Rd & Riverside Dr
10-Year Replacements	$1,424,400	• Manning Rd & Green Valley Plaza • Tecumseh Rd E & Green Valley Dr • Manning Rd & St Gregory's Rd • Tecumseh Rd E & Lacasse Blvd • Riverside Pedestrian Crossing • Tecumseh Rd E & Southfield Dr

Table 1: Summary of Costs

The estimated costs include engineering design costs and capital maintenance replacements to ensure full life of the signalized intersections in future years.

Background

A condition assessment was conducted for all traffic signal infrastructure owned and maintained by the Corporation of the Town of Tecumseh (Town), including 12 intersections and 1 signalized pedestrian crossing. The traffic signal infrastructure generally includes poles, luminaires, mast arms, traffic signal heads, pedestrian signal heads, pedestrian push buttons, handholes, vehicle detectors, cabinets, controllers, wiring and conduit.

PBX Engineering Ltd. (PBX) performed a visual, non-destructive inspection of the infrastructure to confirm the existing conditions, a summary of which is included in Appendix A of this report. The traffic signal condition assessment was used as the basis for identifying the recommended priority, scope and budgetary replacement costs for related infrastructure improvements, which could be utilized by the Town to develop a long-term, comprehensive maintenance and capital replacement strategy as part of their overall asset management program.

Inspections were completed in the presence of Jay Harris (Town of Tecumseh). Observed deficiencies were recorded, including information on past events and maintenance performed at each intersection, as provided by the maintenance personnel. In general, the age of equipment was determined by input from maintenance personnel or name plate information collected while on-site.

Estimates of probable costs for replacement of existing infrastructure are provided on the spreadsheets in Appendix A. The costs are 2025 values based on recent tender results in Windsor-Essex County for similar projects. In addition, equipment supply costs were obtained from manufacturers for comparison to our estimates of probable cost.

The locations reviewed as part of this assessment include:

- Lesperance Road and Riverside Drive
- Lesperance Road and McNorton Street
- Tecumseh Road East and Lesperance Road
- Lesperance Road and Arbour Street
- 13465 Riverside Drive Pedestrian Crossing
- Manning Road and St. Gregory's Road
- Manning Road and Green Valley Plaza
- Tecumseh Road East and Manning Road
- Tecumseh Road East and Green Valley Drive
- Tecumseh Road East and Lacasse Boulevard
- Tecumseh Road East and Shawnee Road
- Tecumseh Road East and Southfield Drive
- Tecumseh Road East and Dorset Park

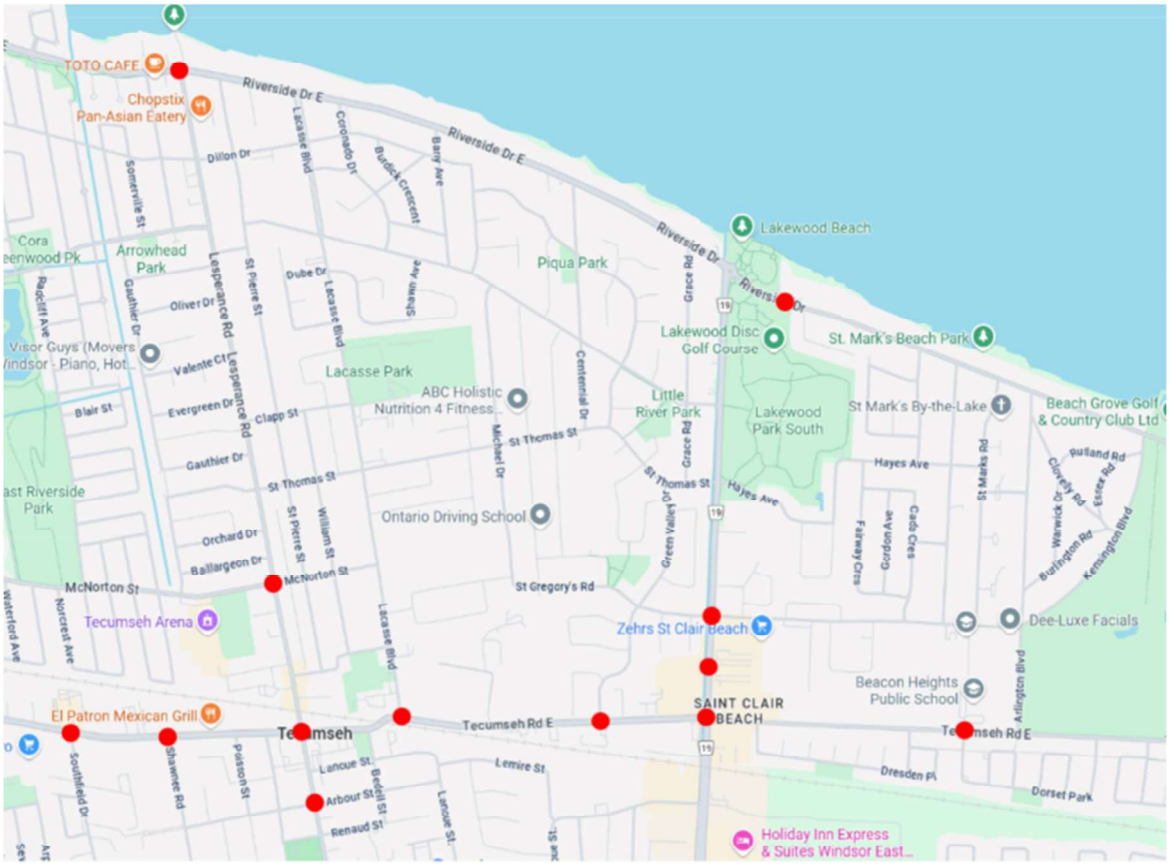

Figure 1 – Map of Tecumseh – Location of Traffic Signals

Assessment Criteria

The following describes the criteria and legislative requirements that were used in the assessment of the condition and suitability of the existing traffic signal infrastructure.

Traffic Signal Infrastructure Condition Rating

The condition rating for the individual items at the intersection are shown in Appendix A. Condition ratings combine all condition factors which includes but is not limited to impact damage, surface paint finish, corrosion, functionality, and meeting required codes, standards and guidelines.

Pole condition ratings are as follows:

1 – Very Good (No pole damage or aging visible. New or near new condition.)

2 – Good (In good condition. No action necessary.)

3 – Fair (No immediate action recommended / review periodically.)

4 – Poor (Replacement recommended.)

5 – Very Poor (Immediate action strongly advised - replace as soon as possible.)

Infrastructure Age and Life Span

The Ministry of Transportation of Ontario (MTO) previously developed an industry standard indicating the lifespan of typical traffic signal equipment. MTO standards have not been updated in recent years with the introduction of LED and aluminum versus polycarbonate signal housings; therefore, some adjustments were also included based on industry standards. Life span also heavily depends on the maintenance practices of the operator, utilizing appropriate preventative and reactive maintenance practices can extend the life of equipment.

Table 1 below indicates the normal life span of typical traffic signal infrastructure assuming regular maintenance.

Equipment	Normal Life Span
Sectional Steel Pole	25
Decorative Steel Pole	25
Signal Head Housing (Traffic and Pedestrian)	20
LED Signal Modules (Traffic and Pedestrian)	10
Pedestrian Pushbutton	20
Handhole	25
Loop Detector	5
Controller	20
Cabinet	20
UPS	20
Wiring	20
Conduit	20

Table 2: Typical Life Span of Traffic Signal Infrastructure

While these normal life expectancies were used as a guide, we applied our engineering judgment in establishing the proposed schedules for maintenance and replacement activities based on the observed condition of the traffic signal infrastructure at each intersection, as outlined below.

Some equipment at the intersections listed below may be near, but not at the end of its normal life; however, it is recommended that all equipment be replaced at the same time to save on future maintenance costs. Uninterruptible power supplies (UPS) are not mandatory; however, including them at intersections provides redundancy in the case of power outages. At some intersections below UPS units are recommended to be installed within 4 to 5 years as capital budget is available.

Accessibility for Ontarians with Disabilities Act (AODA)

In 2016, updates were made to the AODA around the use of traffic signals, specifically pedestrian crossings. The changes can be found in the Ontario Regulation (O. Reg.) 191/11: Integrated Accessibility Standards, specifically section 80.28, Exterior paths of travel, accessible pedestrian control signals. The O. Reg. requires that all pedestrian crossing facilities accommodate individuals with disabilities and outlines specific requirements including the location of push buttons and signal heads, the use of audible signals and the geometric layout of the intersection corners (sidewalk approaches and ramps). These requirements must be met for all new traffic control signal signals with pedestrian control signals, or for existing pedestrian control signals when they are being replaced.

The legislation required Municipalities to have developed a plan in place for how they intend to meet these requirements.

Currently there are two intersections within the Town that meets the AODA requirements: 13465 Riverside Drive Pedestrian Crossing, and Tecumseh Road East and Dorset Park.

Upgrades to full AODA pedestrian facilities may require the relocation of poles (including wiring and conduit modifications), reconfiguration of the ramps, curbs, concrete sidewalk at the corners and the addition of tactile surfaces for the ramps. To accommodate the potential costs for the geometric changes listed above, a separate standard allowance was included for each intersection shown in Appendix A under the year that a full upgrade is recommended at the intersection.

Condition Assessment Review

The traffic signal infrastructure in the Town ranges from being installed in the late 1980's to more recent installations in 2023. Maintenance and upgrades to the infrastructure have been completed as part of related roadway improvements, through regular maintenance and inspection programs, or on an as-needed basis. A summary of the condition of traffic signal infrastructure at each of intersection is outlined below.

Lesperance Road and Riverside Drive

This intersection was installed in approximately 1988. Since that time, maintenance has been carried out on an as-needed basis. Traffic signal light modules were replaced between 1998 and 2000 with LED modules. The signal heads have newer polycarbonate housings. Luminaires were replaced between 2016 and 2018 with LED modules. Northbound signal heads were replaced in 2023. In general, the equipment at this intersection appears to have been well maintained and as a result, remains in fair condition. The pedestrian facilities do not meet AODA requirements. The traffic signal controller was replaced recently, and a UPS was added to the cabinet.

Currently, the following items require attention:

- The pedestrian signal heads require the LED modules to be replaced due to several LEDs being burnt out.
- The pedestrian pads on the pedestrian push buttons are worn and the paint on the housing is peeling; however, they are still operating.
- The detector loops are still functioning; however, are past the end of their normal life.
- The power supply cabinet should be replaced as it is showing signs of corrosion (Figure 2).

Accordingly, the following short-term improvements are recommended:

- Replace the pedestrian push buttons with similar models.
- Replace the detector loops within the next 4 years.

Other items noted but do not require immediate attention:

- Pole base on the SW corner has an external conduit entering from the top of the base, it is assumed that there may be damage to the conduits entering the pole base (Figure 3).
- The poles at this intersection appear to be single shaft, painted steel poles. Some locations the paint has started peeling, this should be treated to ensure rust does not occur in the future (Figure 4).

Based on the age of the original installation, this intersection is beyond the end of useful life. However, based on the condition of equipment at the intersection and the recent replacements, it is estimated that the signal reconstruction could be delayed for up to 5 years. A full reconstruction would include the replacement of poles, mast arms, signal housings and LED modules, pedestrian signal housing and LED modules, new conduit and wiring as needed, upgrades to AODA pedestrian facilities, new vehicle detection equipment and handhole replacement as required. The traffic signal controller, UPS and cabinet can be retained; however, the UPS batteries should be replaced.

Figure 2: Power Supply Cabinet

Figure 3: External Conduit

Figure 4: Painted Pole with Peeling Paint

Lesperance Road and McNorton Street

This intersection was installed in approximately 1994. Since that time, maintenance has been carried out on an as-needed basis. Traffic signal light modules were replaced between 1998 and 2000 with LED modules. The signal heads have newer polycarbonate housings. In general, the equipment at this intersection has been well maintained and as a result, remains in good condition. The traffic signal controller was replaced recently, and a UPS was added to the cabinet. The pedestrian facilities do not meet AODA requirements.

Currently, the following items require attention:

- The pedestrian signal heads require the LED modules to be replaced due to several LEDs being burnt out.
- The signal heads require the LED modules to be replaced as standard maintenance practice.
- The pedestrian pads on the pedestrian push buttons are worn and the paint on the housing is peeling; however, they are still operating (Figure 6).
- The detector loops are still functioning; however, are past the end of their normal life.

Accordingly, the following short-term improvements are recommended:

- Replace the pedestrian push buttons with similar models.
- Replace the detector loops within the next 4 years.
- Replace HPS luminaires (Figure 7) if parts are difficult to obtain, replacement with LED fixtures.

Other items noted but do not require immediate attention:

- The poles at this intersection appear to be single shaft, painted steel poles. At some locations the paint has started peeling (Figure 5).

Based on the age of the original installation, this intersection is beyond the end of useful life. However, based on the condition of equipment at the intersection and the recent replacements, it is estimated that the signal reconstruction could be delayed for up to 5 years. A full signal reconstruction would include the replacement of poles, mast arms, new conduit and wiring as needed, upgrades to AODA pedestrian facilities and handhole replacement as required. The traffic signal controller, UPS and cabinet can be retained; however the UPS batteries should be replaced.

Figure 5: Painted Pole with Peeling Paint

Figure 6: Pedestrian Push Buttons

Figure 7: HPS Luminaire

Tecumseh Road East and Lesperance Road

This intersection was installed in approximately 1981. In general, the equipment at this intersection is past the end of normal life and in poor condition. Paint is peeling from the poles and mast arms; rust and corrosion is showing on most equipment (Figure 8 & 9). The decorative shoebox luminaires are no longer in working order. Traffic signal light modules were replaced between 1998 and 2000 with LED modules. The signal heads have newer polycarbonate housings. The west median signal head was replaced in 2018. The pedestrian facilities do not meet AODA requirements. The traffic signal controller was replaced recently, and a UPS was added to the cabinet. The concrete pad for this controller is too small and does not meet OPS Standards.

It is recommended that this signal system be reconstructed within the next year, including the replacement of poles, mast arms, traffic signal housings and LED modules, pedestrian signal housings and LED modules, new conduit and wiring as needed, upgrades to AODA pedestrian facilities, loop replacement and handhole replacement as required. The traffic signal controller, UPS and cabinet can be retained; however, the UPS batteries should be replaced.

Figure 8: Painted Pole with Peeling Paint

Figure 9: Painted Pole with Peeling Paint

Lesperance Road and Arbour Street

This intersection was installed in approximately 1981. In general, the equipment at this intersection is past the end of normal life and in poor condition. Paint is peeling from the poles and mast arms; rust and corrosion is showing on most equipment (Figure 10). The decorative shoebox luminaires are no longer in working order. The southwest pole and mast arm were replaced in 2016 with a wood pole, creating an overhead span across the west leg of the intersection (Figure 12). The overhead span is connected on the northwest corner to the decorative pole; there is no documented structural review to confirm this configuration is sustainable.

Traffic signal light modules were replaced between 1998 and 2000 with LED modules. The signal heads have newer polycarbonate housings. The pedestrian facilities do not meet AODA requirements. The cabinet and controller were recently replaced, with a UPS included. Loops were recently replaced as well.

It is recommended that this signal system be reconstructed within the next year, including the replacement of poles, mast arms, traffic signal housings and LED modules, pedestrian signal housings and LED modules, new conduit and wiring as needed, upgrades to AODA pedestrian facilities and handhole replacement as required. The traffic signal controller, UPS and cabinet can be retained; however, the UPS batteries should be replaced.

Figure 10: Peeling Paint and Push Button

Figure 11: New Cabinet and Controller

Figure 12: New Loops Installed

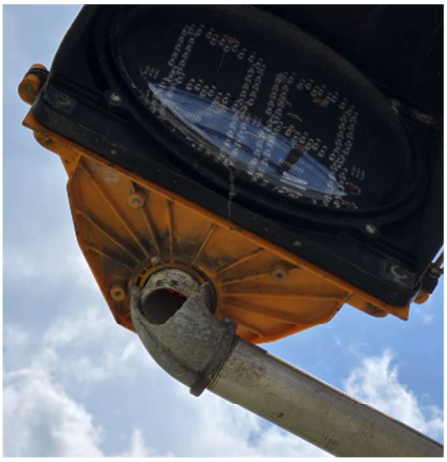

Figure 13: Broken Arm

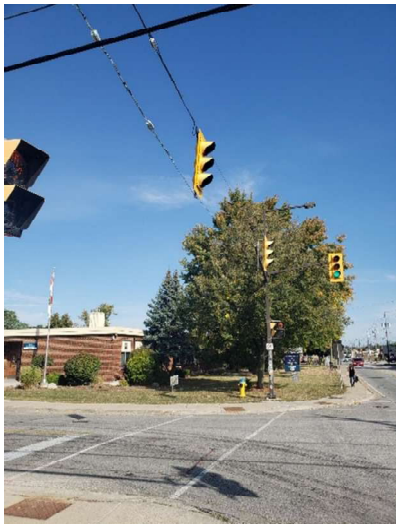

Figure 14: Overhead Span Wire

13465 Riverside Drive Pedestrian Crossing

This intersection was installed in 2013. Since that time, maintenance has been carried out on an as-needed basis. In general, the equipment at this intersection is in good condition. The signal heads have newer polycarbonate housings. Luminaires were replaced between 2016 and 2018 with LED modules. Northbound signal heads were replaced in 2023. In general, the equipment at this intersection appears to have been well maintained and as a result, remains in fair condition. The pedestrian facilities do not meet AODA requirements. The traffic signal controller is in a pole mounted cabinet and is a 170 controller (Figure 18). Currently, the following items require attention:

- The pedestrian push button on the north side was not calling the accessible sound option.
- The pedestrian push button housings were showing signs of wear and peeling (Figure 17).
- The vehicle traffic signal housings were showing signs of wear and peeling.
- Conduit from the power supply cabinet has been taped together (Figure 15).

Accordingly, the following short-term improvements are recommended:

- Replace the pedestrian push buttons with similar models.
- Replace the vehicle traffic signal housings.
- Repair or replace the conduit at the power supply.

Other items noted but do not require immediate attention:

- The pole bases are showing signs of spalling and will require monitoring (Figure 16).
- The bases of the decorative poles are showing signs of peeling and should be scraped and re-painted to extend the life of the poles (Figure 16).

Based on the age of the installation and equipment, this signal should be re-built in 2033. However, based on the condition of equipment at the intersection and recommended maintenance noted above, it is estimated that the signal reconstruction could be delayed for up to 5 years beyond the end of useful life. It is recommended that the traffic signal system be reconstructed in the year 2033, include the replacement of poles, mast arms, signal housings and LED modules, pedestrian signal housing and LED modules, new conduit and wiring as needed, upgrades to AODA

pedestrian facilities, new vehicle detection equipment, traffic signal controller and cabinet, and handhole replacement as required.

Figure 15: Damaged Conduit

Figure 16: Concrete Spalling and Peeling Paint

Figure 17: Pedestrian Push Button

Figure 18: Pole Mounted Cabinet with 170 Controller

Manning Road and St. Gregory's Road

This intersection was installed in approximately 2006. Since that time, maintenance has been carried out on an as-needed basis. In general, the equipment at this intersection appears to have been well maintained and as a result, remains in good condition. The signal heads have newer polycarbonate housings. The pedestrian facilities do not meet AODA requirements. The traffic signal controller was replaced recently. The southeast pole was replaced in 2023.

Currently, the following items require attention:

- The pedestrian pads on the pedestrian push buttons are worn and the paint on the housing is peeling; however, they are still operating (Figure 21).
- The detector loops are still functioning; however, are past the end of their normal life.
- The power supply cabinet should be replaced as it is showing signs of corrosion (Figure 19), and the conduit has broken sections (Figure 18).
- The southbound secondary signal head is missing a backboard, located on the south leg median island.
- The southbound pedestrian signal head on the southeast corner is missing both visors and has twisted. (Figure 22).

Accordingly, the following short-term improvements are recommended:

- Replace the pedestrian push buttons with similar models.
- Replace the detector loops within the next 5 years.
- Replace the power supply cabinet and fix conduits.
- Replace backboards and visors, that are missing or damaged on signal heads.

Other items noted but do not require immediate attention:

- This location does not currently have a UPS. While this location is not considered high priority due to traffic volumes on the side street, if the Town's standard is to include a UPS on all traffic signals, one could be added.

Based on the age of the original installation, this intersection should be reconstructed in 2026. However, based on the condition of equipment at the intersection, with the replacements noted above and on-going maintenance, it is estimated that the signal reconstruction could be delayed for up to 10 years. It is recommended that the traffic signal system be reconstructed in the year 2032, including the replacement of poles, mast arms, new conduit and wiring as needed, upgrades to AODA pedestrian facilities, a new pad mounted cabinet, new controller and handhole replacement as required. A UPS should be included at this intersection at this time.

Figure 19: Power Supply Cabinet

Figure 20: Power Supply Conduits

Figure 21: Pedestrian Push Button

Figure 22: Pedestrian Signal Head

Manning Road and Green Valley Plaza

This intersection was installed in approximately 2005. Since that time, maintenance has been carried out on an as-needed basis. In general, the equipment at this intersection appears to have been well maintained and as a result,

remains in good condition. The signal heads have newer polycarbonate housings. The pedestrian facilities do not meet AODA requirements. The traffic signal controller was replaced recently.

Currently, the following items require attention:

- The pedestrian pads on the pedestrian push buttons are worn and the paint on the housing is peeling; however, they are still operating (Figure 23).
- The detector loops are still functioning; however, are past the end of their normal life.
- The power supply cabinet should be replaced as it is showing signs of corrosion (Figure 24) and the conduit has broken sections (Figure 25).

Accordingly, the following short-term improvements are recommended:

- Replace the pedestrian push buttons with similar models.
- Replace the detector loops within the next 4 years.
- Replace the power supply cabinet and fix conduits.

Other items noted but do not require immediate attention:

- This location does not currently have a UPS. While this location is not considered high priority due to traffic volumes on the side street, if the Town's standard is to include a UPS on all traffic signals, one could be added.

Based on the age of the original installation, this intersection should be reconstructed in 2025. However, based on the condition of equipment at the intersection, with the replacements noted above and on-going maintenance, it is estimated that the signal reconstruction could be delayed for up to 10 years. It is recommended that the traffic signal system be reconstructed in the year 2031, including the replacement of poles, mast arms, new conduit and wiring as needed, upgrades to AODA pedestrian facilities, a new pad mounted traffic signal cabinet, new controller and handhole replacement as required. A UPS should be included at this intersection at this time.

Figure 23: Pedestrian Push Button

Figure 24: Power Supply Cabinet

Figure 25: Power Supply Conduit

Figure 26: Pedestrian Push Button

Tecumseh Road East and Manning Road

This intersection was installed in approximately 2005. Since that time, maintenance has been carried out on an as-needed basis. In general, the equipment at this intersection appears to have been well maintained and as a result, remains in good condition. The vehicle signal heads have newer polycarbonate housings. The pedestrian facilities do not meet AODA requirements. The traffic signal controller was replaced recently, and a UPS has been installed.

Currently, the following items require attention:

- The pedestrian pads on the pedestrian push buttons are worn and the paint on the housing is peeling; however, they are still operating (Figure 28).
- The detector loops are still functioning; however, are past the end of their normal life.
- The northbound secondary signal head and the eastbound auxiliary signal head are missing backboards.

Accordingly, the following short-term improvements are recommended:

- Replace the pedestrian push buttons with similar models.
- Replace the detector loops within the next 5 years.
- Replace backboards that are missing or damaged on signal heads.

Other items noted but do not require immediate attention:

- Several of the pedestrian signals remain in the original metal housings (Figure 29). While not a priority, the paint is peeling and therefore the visibility of the signal head to drivers and pedestrians is reduced. It is recommended to change these if the signal is not reconstructed within 5 years.

Based on the age of the original installation, this intersection should be reconstructed in 2025. As this intersection experiences the highest volume of traffic, in the Town, it is recommended to adhere closely to the end-of-life timing. It is recommended that the traffic signal system be reconstructed in or before, the year 2028, including the replacement of poles, mast arms, new conduit and wiring as needed, upgrades to AODA pedestrian facilities, a new pad mounted traffic cabinet, and handhole replacement as required. The traffic signal controller and UPS can be retained; however, the UPS batteries should be replaced.

Figure 27: Traffic Manhole

Figure 28: Pedestrian Push Button

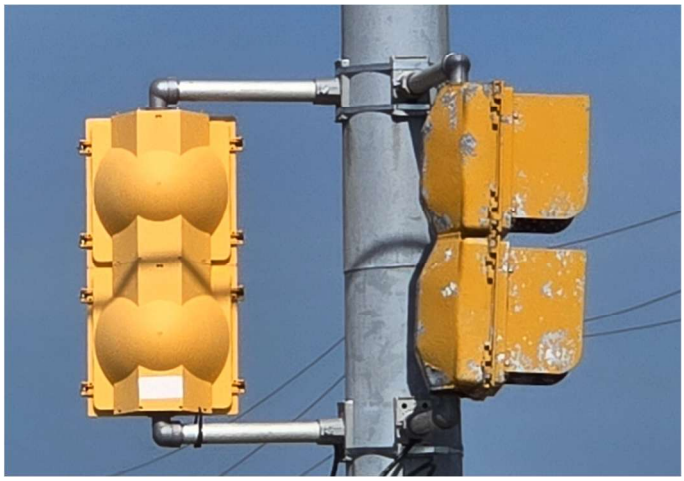

Figure 29: Pedestrian Signal Head Housing

Tecumseh Road East and Green Valley Drive

This intersection was installed in approximately 2006. Since that time, maintenance has been carried out on an as-needed basis. In general, the equipment at this intersection appears to have been well maintained and as a result, remains in good condition. The pedestrian facilities do not meet AODA requirements. The traffic signal controller was replaced recently. The west median pole was replaced in 2024.

Currently, the following items require attention:

- The pedestrian pads on the pedestrian push buttons are worn and the paint on the housing is peeling; however, they are still operating.
- The detector loops are still functioning; however, are past the end of their normal life.
- There were some locations with damage to signal backboards (Figure 31).

Accordingly, the following short-term improvements are recommended:

- Replace the pedestrian push buttons with similar models.
- Replace the detector loops within the next 5 years.
- Replace backboards that are damaged on signal heads.

Other items noted but do not require immediate attention:

- This location does not currently have a UPS. While this location is not considered high priority due to traffic volumes on the side street, if the Town's standard is to include a UPS on all traffic signals, one could be added.
- Several of the pedestrian signals remain in the original metal housings (Figure 30). While not a priority, the paint is peeling and therefore the visibility of the signal head to drivers and pedestrians is reduced. It is recommended to change these if the signal is not reconstructed within 5 years.

Based on the age of the original installation, this intersection should be reconstructed in 2026. However, based on the condition of equipment at the intersection, with the replacements noted above and on-going maintenance, it is estimated that the signal reconstruction could be delayed for up to 7 years. It is recommended that the traffic signal system be reconstructed in the year 2032, including the replacement of poles, mast arms, new conduit and wiring as needed, upgrades to AODA pedestrian facilities, a new pad mounted traffic cabinet, new controller and handhole replacement as required. A UPS should be included at this intersection at this time.

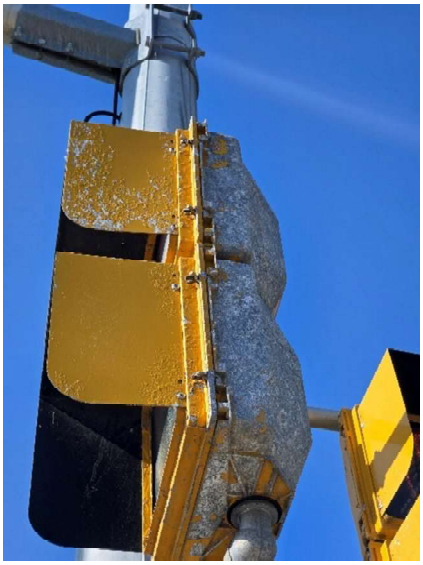

Figure 30: Pedestrian Signal Head Housing

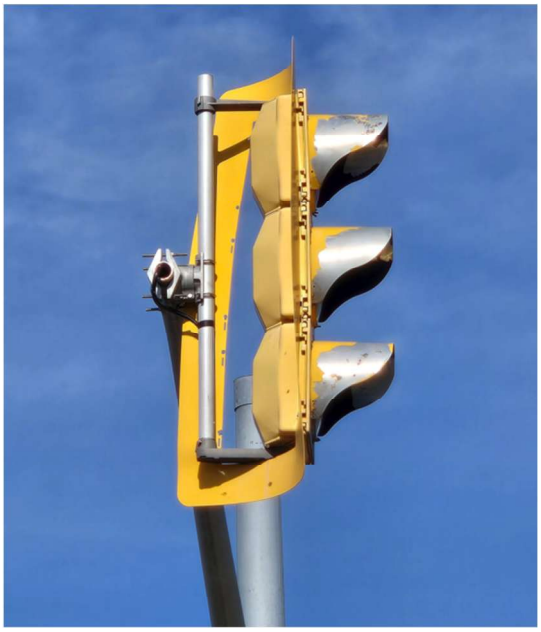

Figure 31: Traffic Signal Head Housing and Backboard

Figure 32: Traffic Pole Base and Anchor Bolts

Tecumseh Road East and Lacasse Boulevard

This intersection was installed in approximately 2009. Since that time, maintenance has been carried out on an as-needed basis. In general, the equipment at this intersection appears to have been well maintained and as a result, remains in good condition. The southeast pole was replaced in 2022, and a pedestrian pushbutton and signal head were added to the pole in 2025. The vehicle signal heads have newer polycarbonate housings. The pedestrian facilities do not meet AODA requirements. The traffic signal controller was replaced recently, and a UPS has been installed.

Currently, the following items require attention:

- The pedestrian pads on the pedestrian push buttons are worn and the paint on the housing is peeling; however, they are still operating.
- The visor is missing from the pedestrian signal head on the northeast corner of the intersection (Figure 34).
- The detector loops are still functioning; however, are past the end of their normal life.

Accordingly, the following short-term improvements are recommended:

- Replace the worn-out pedestrian push buttons with similar models.
- Replace missing visors.
- Replace the detector loops within the next 5 years.

Other items noted but do not require immediate attention:

- The pole on the northwest corner shows significant denting (Figure 33). While still standing and may have the ability to remain as such for several years. It is recommended to replace as this pole has several attachments that add strain to the pole structure.
- Several of the pedestrian signals remain in the original metal housings. While not a priority, the paint is peeling and therefore the visibility of the signal head to drivers and pedestrians is reduced. It is recommended to change these if the signal is not reconstructed within 5 years.
- There are no pedestrian pushbuttons for the E/W crossing on the north side of the intersection. They are not required as this intersection has pedestrian recall on the main street. However, if and when this intersection is upgraded to meet AODA, buttons will be required for this crossing.
- This intersection does not have countdown pedestrian signals. It is the only intersection in the Town without this type of signal. While not mandatory, they should be added when the intersection is re-built.

Based on the age of the original installation, this intersection should be reconstructed in 2029. However, based on the condition of equipment at the intersection, with the replacements noted above and on-going maintenance, it is estimated that the signal reconstruction could be delayed for up to 5 years. It is recommended that the traffic signal system be reconstructed in the year 2033, including the replacement of poles, mast arms, new conduit and wiring as needed, upgrades to AODA pedestrian facilities, a new pad mounted traffic cabinet, and handhole replacement as required. The traffic signal controller and UPS should be replaced at this time.

Figure 33: Traffic Signal Pole

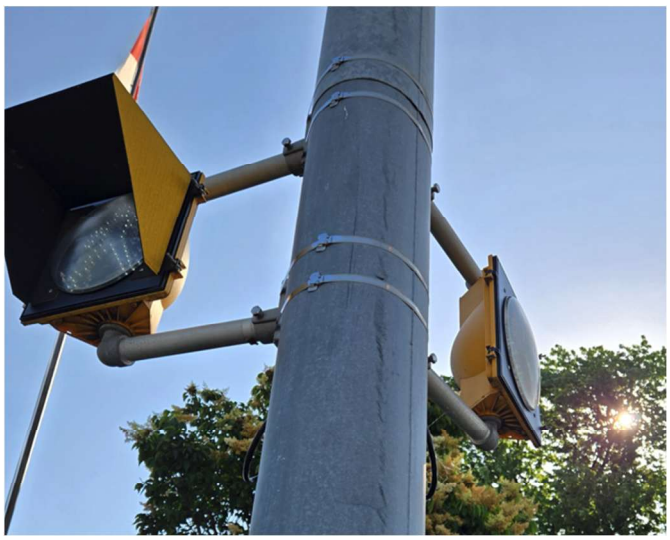

Figure 34: Pedestrian Signal Heads

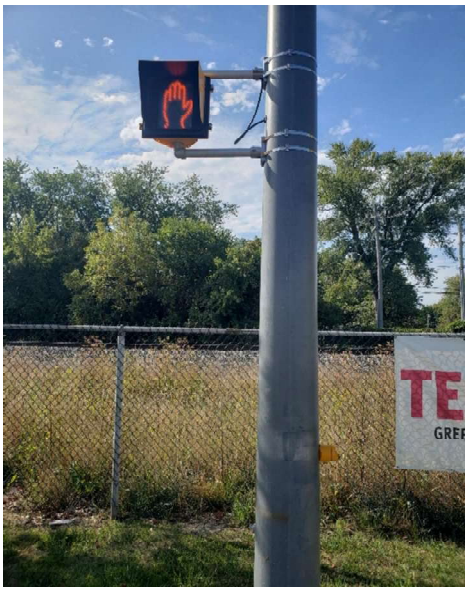

Figure 35: New Pedestrian Signal Head and Pushbutton

Tecumseh Road East and Shawnee Road

This intersection was installed in approximately 1981. In general, the equipment at this intersection is past the end of normal life and in poor condition. This intersection has undergone several modifications over the years; however major upgrades have not been completed.

Paint is peeling from the poles and mast arms; rust and corrosion is showing on most equipment (Figure 37). The decorative shoebox luminaires are no longer in working order. Traffic signal light modules were replaced between 1998 and 2000 with LED modules. The signal heads have newer polycarbonate housings. The signal infrastructure on the northwest corner is located on a joint use utility pole. The traffic signal cabinet is the original post mounted cabinet that is located inches from the curb and has been damaged by passing trucks on several occasions (Figure 38), however the controller has been replaced recently. The power supply cabinet is fully rusted and shows corrosion (Figure 36).

It is recommended that this signal system be reconstructed within the next year, including the replacement of poles, mast arms, traffic signal housings and LED modules, pedestrian signal housings and LED modules, UPS, new conduit and wiring as needed, upgrades to AODA pedestrian facilities, loop replacement, a new standard size concrete pad for the controller cabinet and handhole replacement as required. Some equipment may be near, but not at the end of its normal life, however it is recommend replacing all equipment at the same time to save on future maintenance costs. The traffic signal controller can be retained.

Figure 36: Pedestrian Signal Heads

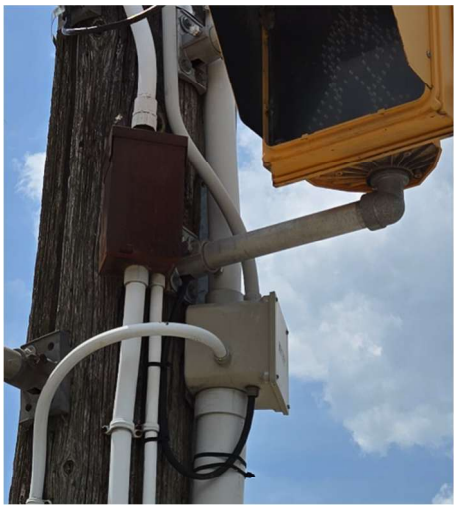

Figure 37: Power Supply Cabinet

Figure 38: Painted Pole with Peeling Paint

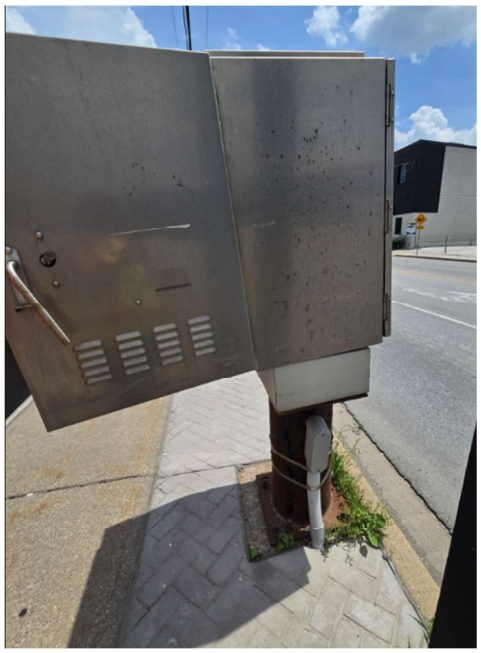

Figure 39: Traffic Signal Cabinet

Tecumseh Road East and Southfield Drive

This intersection was installed in approximately 2007. Since that time, maintenance has been carried out on an as-needed basis. In general, the equipment at this intersection appears to have been well maintained and as a result, remains in good condition. The signal heads have newer polycarbonate housings. The pedestrian facilities do not meet AODA requirements. The traffic signal controller was replaced recently, and a UPS has been installed.

The northeast corner of the intersection has built landscaping surrounding the traffic pole (Figure 40). This limits access for maintenance access (larger stones), and they have covered the base of the pole with pebble stones, it is possible that this stone has entered the conduits at the base of the pole, risking damage to the wiring underground and creating electrical faults and potential grounding issues. It is recommended that this landscaping be removed, or the pole be relocated outside of the landscaping.

Currently, the following items require attention:

- The pedestrian pads on the pedestrian push buttons are worn and the paint on the housing is peeling; however, they are still operating.
- The detector loops are still functioning; however, are past the end of their normal life.
- The eastbound secondary signal head is missing the backboard.

Accordingly, the following short-term improvements are recommended:

- Replace the pedestrian push buttons with similar models.
- Replace the detector loops within the next 5 years.
- Replace backboards that are missing or damaged on signal heads (Figure 42).

Other items noted but do not require immediate attention:

- This location does not currently have a UPS. While this location is not considered high priority due to traffic volumes on the side street, if the Town's standard is to include a UPS on all traffic signals, one could be added.
- Some poles bases were buried in earth / grass (Figure 41). This can cause early corrosion of the anchor bolts holding the pole. It is recommended to keep the concrete bases exposed.

Based on the age of the original installation, this intersection should be reconstructed in 2027. However, based on the condition of equipment at the intersection, with the replacements noted above and on-going maintenance, it is estimated that the signal reconstruction could be delayed for up to 10 years. It is recommended that the traffic signal system be reconstructed in the year 2034, including the replacement of poles, mast arms, new conduit and wiring as needed, upgrades to AODA pedestrian facilities, a new pad mounted traffic cabinet, and handhole replacement as required. The traffic signal controller and UPS should be replaced at this time.

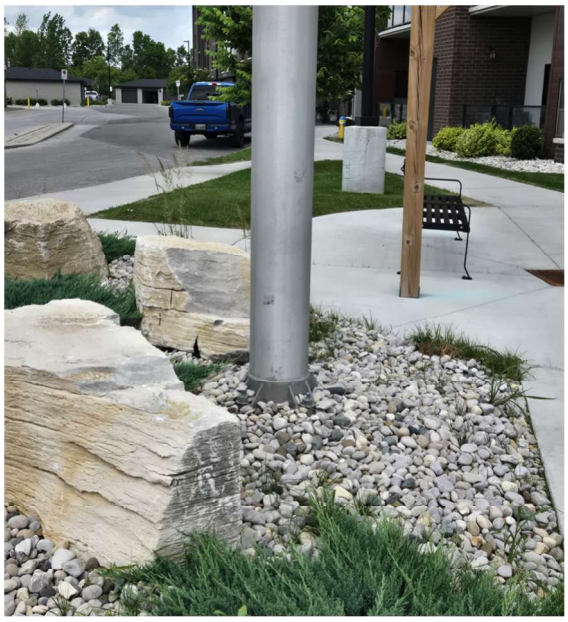

Figure 40: Traffic Pole in Landscaping

Figure 41: Traffic Pole Base

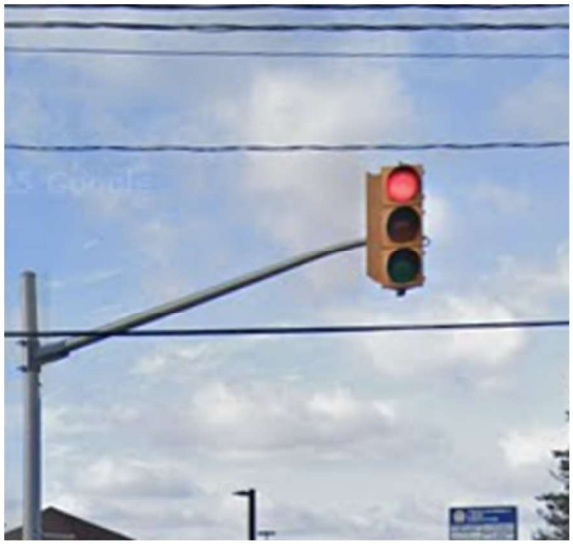

Figure 42: Traffic Signal Head Backboard

Tecumseh Road East and Dorset Park

This intersection was installed in late 2023. In general, the equipment at this intersection is in excellent condition. This intersection was installed to meet new AODA pedestrian requirements. This intersection was installed with a UPS and a pad mounted traffic signal cabinet. The intersection includes smaller, pedestrian posts for the location of pedestrian push buttons, in addition to standard sectional steel poles.

It is recommended that with a regular maintenance program this intersection will be operational until at minimum, 2043.

Summary

The following table summarizes the installation year and anticipated replacement year for each intersection.

Intersection	Estimated Installation Date	Recommended Replacement Year
Lesperance Road & Riverside Drive	1998	2030
Lesperance Road & McNorton Street	1994	2029
Tecumseh Road East & Lesperance Road	1981	2026
Lesperance Road & Arbour Street	1981	2026
13465 Riverside Pedestrian Crossing	2013	2033
Manning Road & St. Gregory's Road	2006	2032
Manning Road & Green Valley Plaza	2005	2031
Tecumseh Road East & Manning Road	2005	2028

Tecumseh Road East & Green Valley Drive	2006	2032
Tecumseh Road East & Lacasse Boulevard	2009	2033
Tecumseh Road East & Shawnee Road	1981	2027*
Tecumseh Road East & Southfield Drive	2007	2034
Tecumseh Road East & Dorset Park	2023	2043

Table 3: Installation and Replacement Years

* While Tecumseh Road East and Shawnee Road is shows as 2027, if capital budget is available, it is recommended to complete this work in 2026.

Conclusion

This document has been prepared based upon the information referenced herein and on-site findings. It has been prepared in a manner consistent with good engineering judgement. Should new information come to light, PBX Engineering Ltd. requests the opportunity to review this information and our conclusions contained in this report. This document has been prepared for the exclusive use of the Town of Tecumseh, and there are no representations made by PBX Engineering Ltd. to any other party. Any use that a third party makes of this document, or any reliance on or decisions made based on it, are the responsibility of such third parties.

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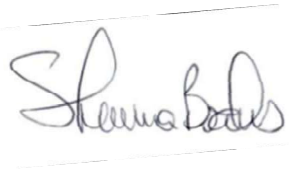

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Appendix A – Asset Assessment Log

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Town of Tecumseh
2025 Signal Assessment - Summary of Costs

#	ITEM DESCRIPTION	REPLACEMENT YEAR											POST 2035 COST	COSTS PER INTERSECTION
		2025	2026	2027	2028	2029	2030	2031	2032	2033	2034	2035		
TRAFFIC INTERSECTION														
1	Lesperance Road and Riverside Drive	$7,000	$10,000	$0	$0	$50,000	$154,200	$0	$0	$0	$0	$0	$42,000	$263,200
2	Lesperance Road and McNorton Street	$12,500	$15,000	$0	$50,000	$196,400	$0	$0	$0	$0	$0	$0	$42,000	$315,900
3	Tecumseh Road East and Lesperance Road	$0	$276,600	$0	$0	$0	$0	$8,000	$0	$0	$0	$0	$46,000	$330,600
4	Lesperance Road and Arbour Street	$0	$211,900	$0	$0	$0	$0	$7,000	$0	$0	$0	$0	$42,000	$260,900
5	13465 Riverside Drive Pedestrian Crossing	$0	$0	$0	$2,000	$0	$0	$0	$30,000	$77,800	$0	$0	$15,000	$124,800
6	Manning Road and St. Gregory's Road	$4,000	$11,000	$0	$0	$0	$0	$50,000	$236,500	$0	$0	$0	$11,000	$312,500
7	Manning Road at Green Valley Plaza	$7,900	$0	$0	$0	$0	$50,000	$216,700	$0	$0	$0	$7,900	$7,500	$290,000
8	Tecumseh Road East and Manning Road	$0	$0	$60,000	$245,700	$0	$0	$0	$0	$0	$6,250	$0	$10,600	$322,550
9	Tecumseh Road East and Green Valley Drive	$8,500	$0	$0	$0	$0	$0	$50,000	$216,900	$0	$0	$8,500	$8,100	$292,000
10	Tecumseh Road East and Lacasse Boulevard	$0	$0	$0	$0	$7,900	$0	$0	$50,000	$201,800	$0	$0	$18,000	$277,700
11	Tecumseh Road East and Shawnee Road	$0	$50,000	$192,830	$0	$0	$0	$6,000	$0	$0	$0	$0	$6,000	$254,830
12	Tecumseh Road East and Southfield Drive	$9,800	$0	$0	$0	$0	$5,800	$0	$0	$50,000	$211,400	$0	$10,000	$287,000
13	Tecumseh Road East and Dorset Park	$0	$0	$10,750	$0	$0	$0	$0	$10,750	$0	$0	$0	$269,600	$291,100
Subtotal by Year		$49,700	$574,500	$263,580	$297,700	$254,300	$210,000	$337,700	$544,150	$329,600	$217,650	$16,400	$527,800	
Grand Total														$3,623,080

PBX ENGINEERING

Town of Tecumseh
Lesperance Road and Riverside Drive

#	ITEM DESCRIPTION	PRESENT AGE	NORMAL LIFE	REMAIN LIFE	STATUS	DESCRIPTION / OBSERVATION	LIFE SPAN ANALYSIS	REPLACEMENT YEAR											POST 2035		GRAND TOTAL
								2025	2026	2027	2028	2029	2030	2031	2032	2033	2034	2035	COST	YEAR	
1	Sectional Steel Traffic Poles (7.0m) 1 NE corner, 1 NW corner	37	25	0	Good	Good condition.	Recommend that poles will last past the end of normal life. Standard maintenance only. Replace as needed or if full intersection replacement is being done, at that time.						$12,000								
2	Sectional Steel Traffic Poles (10.5m) 1 SE corner, 1 SW corner	37	25	0	Good	Good condition.	Recommend that poles will last past the end of normal life. Standard maintenance only. Replace as needed or if full intersection replacement is being done, at that time.						$15,000								
3	Luminaires (2)	5	10	5	Good	Good condition. Luminaires were replaced with new LED's between 2016 and 2018.	Recommend that luminaires be replaced at end of life or if full intersection replacement is being done, at that time. Luminaires should be relamped every 5 years as standard maintenance practice	$1,500					$3,000						$1,500	2037	
4	Luminaire Mast Arms (2)	37	40	3	Good	Good condition. 2.4m mast arms.	Recommend that mast arms be replaced at end of life or if full intersection replacement is being done, at that t theime.						$1,200								
5	Signal Heads - Hwy LED 2 westbound, 2 eastbound, 2 northbound	37	20	0	Good	Signal head housing is orignal to intersection (age 37 years) signal modules were replaced with LED (age 25 years). Northbound signal heads were replaced in 2023.	Recommend that the signal head housings will last past the end of normal life. LED modules should be replaced every 5 years as standard maintenance practice. It is recommended to replace both the signal housing and LED modules during the changes to the rest of the intersection to save costs.	$1,500					$3,000						$1,500	2037	
6	Aluminum Mast Arms Size varies, quantity of 6	37	40	3	Good	Good condition. One mast arm is mounted to a building due to limited space at the intersection.	Recommend that mast arms will last until the end of normal life. Standard maintenance only. Replace as needed or if full intersection replacement is being done, at that time.						$10,000								
7	Pedestrian Signal Heads - Pedestrian LED (2 section) 2 N/S east side, 2 N/S west side, 2 E/W south side	37	20	0	Fair	Signal head housing is orignal to intersection (age 37 years) signal modules show a number of burnt out sections.	Recommend that the signal head housings will last past the end of normal life. LED modules should be replaced every 5 years as standard maintenance practice. It is recommended to replace both the signal housing and LED modules during the changes to the rest of the intersection to save costs.	$4,000					$7,000						$4,000	2037	
8	Pedestrian Pushbutton 2 SE corner, 2 SW corner, 1 NE corner, 1 NW corner	37	10	0	Fair	Paint is peeling from most of the pushbutton units. Pad is worn out on most locations. Operationally still functioning. 2 pushbuttons were replaced in 2023 (1 NE, 1SE).	Recommend to replace the older pushbuttons with new modules within the next year. Replacement of pushbuttons may require upgrades to AODA standards.		$5,000				$11,000								
9	Handhole 1 SE corner, 1 SW corner, 1 NE corner, 1 NW corner	37	25	0	Good	Good condition.	Recommend that handholes will last past the end of normal life. Standard maintenance only. Replace as needed or if full intersection replacement occurs, at that time.						$12,000								
10	Loop Detector 1 northbound	37	5	0	Good	Good condition, no issues reported.	Recommend that loops will last past the end of normal life. Standard maintenance only. Replace with loops for maintenance. Replace with non-intrusive system with full intersection replacement.		$5,000				$15,000								
11	Control Cabinet	3	20	17	Good	A new McCain ATC controller was installed at this intersection in a new pad mounted cabinet.	Recommend that controller and UPS unit will last until the end of normal life. Standard maintenance only.												$25,000	2042	
12	UPS	3	20	17	Good	A UPS was added when the controller was replaced at this intersection.	UPS should be replaced at the same time as the controller.												$10,000	2042	
13	Wiring and Conduit	37	20	0	Good	No wiring issues reported. However one pole appears to have collapsed ducts at the controller base.	No issues were reported for conduit and/or wiring. When a full intersection reconstruction occurs, new wiring should be pulled and conduit replaced as needed.						$40,000								
14	Goometric Changes for AODA	N/A	N/A	N/A	N/A	N/A	Geometric changes required at intersection to meet AODA requirements.						$25,000								
15	Design Fees	N/A	N/A	N/A	N/A	N/A	Consulting Services for Civil and Electrical Upgrades (designs to be completed year prior to installation)					$50,000									
Subtotal by Year								$7,000	$10,000	$0	$0	$50,000	$154,200	$0	$0	$0	$0	$0	$42,000		
Grand Total																					$263,200

Town of Tecumseh
Lesperance Road and McNorton Street

#	ITEM DESCRIPTION	PRESENT AGE	NORMAL LIFE	REMAIN LIFE	STATUS	DESCRIPTION / OBSERVATION	LIFE SPAN ANALYSIS	REPLACEMENT YEAR											POST 2035		GRAND TOTAL
								2025	2026	2027	2028	2029	2030	2031	2032	2033	2034	2035	COST	YEAR	
1	Round Steel Traffic Poles (7.0m) 1 NE corner, 1 SE corner	21	25	4	Good	Good condition. Poles are round, tapered steel poles. They appear to be powder coated or painted.	Recommend that poles will last past the end of normal life. Standard maintenance only. Replace as needed or if full intersection replacement occurs, at that time.					$12,000									
2	Round Steel Traffic Poles (9.0m) 1 NW corner, 1 SW corner	21	25	4	Good	Good condition. Poles are round, tapered steel poles. They appear to be powder coated or painted.	Recommend that poles will last past the end of normal life. Standard maintenance only. It is recommended to replace with standard sectional steel poles when full intersection replacement occurs.					$15,000									
3	Luminaires (2)	21	10	0	Fair	Fair condition. Luminaires are 250W HPS fixtures.	Recommend that the luminaires be replaced using an LED fixture when the poles are replaced, or earlier if stocking of replacement parts are not readily available. LED luminaires should be relamped every 5 years as standard maintenance practice.	$3,000				$3,000							$1,500	2040	
4	Luminaire Mast Arms	21	40	19	Good	Good condition. 1.2m mast arms.	Recommend that mast arms be replaced at the end of life or if full intersection replacement is being done, at that time.					$1,200									
5	Signal Heads - Hwy LED 2 westbound, 2 eastbound, 2 northbound, 2 southbound	21	20	0	Good	Signal head housing is orignal to intersection (age 31 years) signal modules were replaced with LED (age 25 years).	Recommend that the signal head housings will last past the end of normal life. LED modules should be replaced every 5 years as standard maintenance practice. It is recommended to replace both the signal housing and LED modules during the changes to the rest of the intersection to save costs.	$1,500				$3,000							$1,500	2040	
6	Aluminum Mast Arms Size varies, quantity of 8	21	40	19	Good	Good condition.	Recommend that mast arms will last until the end of normal life. Replace as needed or if full intersection replacement occurs, at that time.					$12,000									
7	Signal Heads - Pedestrian LED (2 section) 2 N/S east side, 2 N/S west side, 2 E/W south side, 2 E/W north side	21	20	0	Fair	Multiple signal modules have burnt out LED's.	Recommend to replace existing signal modules with new LED modules. Housing should last past the end of normal life.	$4,000				$9,200							$4,000	2040	
8	Pedestrian Pushbutton 2 SE corner, 2 SW corner, 2 NE corner, 2 NW corner	21	20	0	Fair	Paint is peeling from most of the pushbutton units. Pad is worn out on most locations. Operationally still functioning.	Recommend to replace existing pushbuttons with new modules. Replacement of pushbuttons may require upgrades to AODA standards.	$4,000				$12,000									
9	Handhole 2 SE corner, 2 SW corner, 2 NE corner, 2 NW corner	21	25	4	Good	Good condition.	Recommend that handholes will last past the end of normal life. Standard maintenance only. Replace as needed or if full intersection replacement occurs, at that time.					$24,000									
10	Loop Detector 2 westbound, 1 eastbound	21	5	0	Good	Left turn loops, but not in program.	Recommend that loops will last past the end of normal life. Standard maintenance only. Replace with loops for maintenance. Replace with non-intrusive system with full intersection replacement.		$15,000			$25,000									
11	Control Cabinet	5	20	15	Good	A new cabinet was installed around 2020. A new McCain ATC controller was installed recently at this intersection in existing pad mounted cabinet.	Recommend that controller and UPS unit will last until the end of normal life. Standard maintenance only.												$25,000	2040	
12	UPS	5	20	15	Good	A UPS was added around 2020.	UPS should be replaced at the same time as the controller.												$10,000	2040	
13	Wiring and Conduit	21	20	0	Good	No wiring issues reported. Conduit is blocked in some runs.	No issues were reported for conduit and/or wiring. When a full intersection reconstruction occurs, new wiring should be pulled and conduit replaced as needed.					$40,000									
14	Geometric Changes for AODA	N/A	N/A	N/A	N/A	N/A	Geometric changes required at intersection to meet AODA requirements.					$40,000									
15	Design Fees	N/A	N/A	N/A	N/A	N/A	Consulting Services for Civil and Electrical Upgrades (designs to be completed year prior to installation)				$50,000										
Subtotal by Year								$12,500	$15,000	$0	$50,000	$196,400	$0	$0	$0	$0	$0	$0	$42,000		
Grand Total																					$315,900

Town of Tecumseh
Tecumseh Road East and Lesperance Road

#	ITEM DESCRIPTION	PRESENT AGE	NORMAL LIFE	REMAIN LIFE	STATUS	DESCRIPTION / OBSERVATION	LIFE SPAN ANALYSIS	REPLACEMENT YEAR										POST 2035		GRAND TOTAL
								2025	2026	2027	2028	2029	2030	2031	2032	2033	2034	2035	COST	YEAR	
1	Square Traffic Poles (7.0m) 1 W median, 1 NE corner, 1 SW corner, 1 NW corner	44	25	0	Poor	Square, steel painted poles; paint is peeling. Poles are located too close to road as per recommended spacing from MTO Book 12.	Recommend to replace existing sqaure poles with new sectional steel poles.		$24,000												
2	Square Traffic Poles (10.5m) 1 NE corner, 1 NW corner, 1 SE corner, 1 SW corner	44	25	0	Poor	Square, steel painted poles; paint is peeling. Poles are located too close to road as per recommended spacing from MTO Book 12.	Recommend to replace existing sqaure poles with new sectional steel poles.		$30,000												
3	Luminaires (4)	44	10	0	Very Poor	Very poor condition. Shoebox style high pressure sodium luminaires.	Recommend that luminaires be replaced with LED fixtures immediately or if full intersection replacement is being done, at that time. LED luminaires should be relamped every 5 years as standard maintenance practice.		$6,000										$3,000	2036	
4	Luminaire Mast Arms (4)	37	40	3	Very Poor	Small mast arms holding shoebox style high pressure sodium luminaires.	Recommend that mast arms be replaced at the end of life or if full intersection replacement is being done, at that time.		$2,400												
5	Signal Heads - Pedestrian LED (2 section) 2 N/S east side, 2 N/S west side, 2 E/W south side, 2 E/W north side	44	20	0	Fair	Signal housing is original to intersection (age 44 years) signal modules were replaced with LED (age 25 years). Backboards are missing on most signal heads. West median signal head was replaced in 2018.	Recommend that the signal head housings will last past the end of normal life. LED modules should be replaced every 5 years as standard maintenance practice. It is recommended to replace both the signal housing and LED modules during the changes to the rest of the intersection to save costs.		$8,000					$4,000					$4,000	2036	
6	Square Mast Arms Size varies, quantity of 8	44	40	0	Fair	Square, steel painted mast arms; paint is peeling however the mast arms are in working order.	Recommend to replace existing mast arms with aluminum mast arms at the same time as pole replacement.		$10,000												
7	Signal Heads - Pedestrian LED (2 section) 2 N/S east side, 2 N/S west side, 2 E/W south side, 2 E/W north side	44	20	0	Fair	In general the signal heads are peeling and in fair condition. Multiple signal modules have burnt out LED's.	Recommend that the signal head housings will last past the end of normal life. LED modules should be replaced every 5 years as standard maintenance practice. It is recommended to replace both the signal housing and LED modules during the changes to the rest of the intersection to save costs.		$9,200					$4,000					$4,000	2036	
8	Pedestrian Pushbutton 2 SE corner, 2 SW corner, 2 NE corner, 2 NW corner	44	20	0	Fair	Paint is peeling from pushbutton units. Pad is worn out on most locations. Operationally still functional	Recommend to replace existing pushbuttons with new modules. Replacement of pushbuttons may require upgrades to AODA standards.		$15,000												
9	Handhole 1 SE corner, 1 SW corner, 1 NE corner, 1 NW corner	44	25	0	Fair	No issues reported.	Recommend that handholes be replaced during the changes to the rest of the intersection.		$12,000												
10	Loop Detector 2 northbound, 2 southbound, 1 each east and west left turn lanes	44	5	0	Fair	Westbound left turn loop not functioning.	Recommend that loops be replaced by non-intrusive detection technology when the remainder of the intersection is rebuilt.		$25,000												
11	Control Cabinet	13	20	7	Good	A new controller was installed at this intersection in the existing pad mounted cabinet.	Recommend that controller and UPS unit will last until the end of normal life. Standard maintenance only.												$25,000	2038	
12	UPS	13	20	7	Good	A UPS was added when the controller was replaced at trhis intersecgtion.	UPS should be replaced at the same time as the controller.												$10,000	2038	
13	Wiring and Conduit	37	20	0	Good	No wiring issues reported, Conduit is blocked in some runs.	Recommend to replace the wiring and conduit as needed during changes to the rest of the intersection.		$45,000												
14	Geometric Changes for AODA	N/A	N/A	N/A	N/A	N/A	Geometric changes required at intersection to meet AODA requirements.		$40,000												
15	Design Fees	N/A	N/A	N/A	N/A	N/A	Consulting Services for Civil and Electrical Upgrades (designs to be completed year prior to installation)		$50,000												
Subtotal by Year								$0	$276,600	$0	$0	$0	$0	$8,000	$0	$0	$0	$0	$46,000		
Grand Total																					$330,600

Town of Tecumseh
Lesperance Road and Arbour Street

#	ITEM DESCRIPTION	PRESENT AGE	NORMAL LIFE	REMAIN LIFE	STATUS	DESCRIPTION / OBSERVATION	LIFE SPAN ANALYSIS	REPLACEMENT YEAR										POST 2035		GRAND TOTAL
								2025	2026	2027	2028	2029	2030	2031	2032	2033	2034	2035	COST	YEAR	
1	Square Traffic Poles (7.0m) 1 NE corner	43	25	0	Poor	Square, steel, painted poles; paint is peeling. SW pole was replaced with a sectional steel pole around 2016.	Recommend to replace existing square poles withnew sectional steel poles.		$6,000												
2	Wooden Pole (7.0m) 1 SW corner	9	25	16	Good	Wooden pole.	Recommend to replace with a sectional steel pole when intersection is reconstructed.		$6,000												
3	Square Traffic Poles (10.5m) 1 NW corner, 1 SE corner	43	25	0	Poor	Square, steel painted poles; paint is peeling.	Recommend to replace existing square poles with new sectional steel poles when intersection is reconstructed.		$15,000												
4	Luminaires (2)	0	10	0	Poor	Poor condition. Shoebox style high pressure sodium luminaires.	Recommend that the luminaires be replaced using an LED fixture when the poles are replaced, or earlier if stocking of replacement parts are not readily available.		$3,000					$1,500					$1,500	2036	
5	Luminaire Mast Arms (2)	43	40	0	Poor	Poor condition. 1.2m square mast arms.	Recommend that mast arms be replaced at end of life or if full intersection replacement is being done, at that time.		$1,200												
6	Signal Heads - Hwy LED 2 westbound, 2 eastbound, 2 northbound, 2 southbound	43	10	0	Good	Signal head housing is original to intersection (age 43 years) signal modules were replaced with LED (age 27 years).	Recommend to upgrade the signal head housings when the intersection is reconstructed. LED modules should be replaced every 5 years as standard maintenance practice.		$3,000					$1,500					$1,500	2036	
7	Square Mast Arms Size varies, quantity of 7	43	40	0	Poor	Steel, painted mast arms; paint peeling however the mast arms are in working order. One SW mast arm was replaced with wires holding the signal head up.	Recommend to replace existing mast arms with aluminum mast arms when poles are replaced.		$9,000												
8	Aluminum Mast Arm Quantity of 1	9	40	31	Good	Mast arm was added when new pole was added in 2016.	Recommend that mast arm will last until the end of normal life.														
9	Signal Heads - Pedestrian LED (2 section) 2 N/S east side, 2 N/S west side, 2 E/W south side, 2 E/W north side	43	10	0	Fair	Multiple signal modules have burnt out LED's.	Recommend that the signal head housings will last past the end of normal life. LED modules should be replaced every 5 years as standard maintenance practice. It is recommended to replace both the signal housing and LED modules during the changes to the rest of the intersection to save costs.		$9,200					$4,000					$4,000	2036	
10	Pedestrian Pushbutton 1 SE corner, 1 SW corner, 1 NE corner, 1 NW corner	0	10	10	Excellent	New standard pushbuttons were installed in 2025.	Recommend to replace existing pushbutton with AODA modules.		$7,500												
11	Handhole 1 SE corner, 1 SW corner, 1 NE corner, 1 NW corner	43	25	0	Good	Good condition.	Recommend that handholes be replaced during the changes to the rest of the intersection.		$12,000												
12	Loop Detector 1 westbound, 1 eastbound	0	5	5	Excellent	Loops were recently replaced at this intersection.	Recommend that loops be replaced by non-intrusive detection technology when the remainder of the intersection is rebuilt.		$25,000												
13	Control Cabinet	0	20	20	Excellent	A new controller was recently installed at this intersection.	Recommend that controller will last until the end of normal life.												$25,000	2045	
14	UPS	0	20	20	Excellent	A new UPS was added when the controller was replaced.	Recommend that UPS will last until the end of normal life.												$10,000	2045	
15	Wiring and Conduit	37	20	0	Good	No wiring issues reported, Conduit is blocked in some runs.	Recommend to replace the wiring and conduit as needed during the changes to the rest of the intersection.		$40,000												
16	Geometric Changes for AODA	N/A	N/A	N/A	N/A	N/A	Geometric changes required to meet AODA standards.		$25,000												
17	Design Fees	N/A	N/A	N/A	N/A	N/A	Consulting Services for Civil and Electrical Upgrades (designs to be completed year prior to installation)		$50,000												
Subtotal by Year								$0	$211,900	$0	$0	$0	$0	$7,000	$0	$0	$0	$0	$42,000		
Grand Total																					$260,900

PBX ENGINEERING

Town of Tecumseh
13465 Riverside Drive Pedestrian Crossing

#	ITEM DESCRIPTION	PRESENT AGE	NORMAL LIFE	REMAIN LIFE	STATUS	DESCRIPTION / OBSERVATION	LIFE SPAN ANALYSIS	REPLACEMENT YEAR											POST 2035		GRAND TOTAL
								2025	2026	2027	2028	2029	2030	2031	2032	2033	2034	2035	COST	YEAR	
1	Octogonal Black Painted Traffic Poles (7.0m) 1 north side, 1 south side	12	25	13	Good	Good condition.	Recommend that poles will last until the end of normal life. Standard maintenance only.									$12,000			$11,000	2038	
2	Signal Heads - Hwy LED 2 westbound, 2 eastbound	12	20	8	Good	Good condition.	Recommend that the signal head housing will last until the end of normal life. LED modules should be replaced every 5 years as standard maintenance practice.				$1,500					$3,000			$1,500	2038	
3	Aluminum Black Painted Mast Arms Size varies, quantity of 2	12	40	28	Good	Good condition.	Recommend that mast arms will last until the end of normal life. Standard maintenance only.									$1,500			$2,000	2053	
4	Signal Heads - Pedestrian (1 section) 1 N/S south side, 1 N/S north side	12	20	8	Good	Good condition.	Recommend that signal housing will last until the end of normal life. LED modules should be replaced every 5 years as standard maintenance practice.				$500					$2,300			$500	2038	
5	Audible Pedestrian Pushbutton 1 N/S south side, 1 N/S north side	12	20	8	Good	Good condition. Vibro-tactile feature not working on north side.	Recommend that pushbuttons will last until the end of normal life. Standard maintenance only. Replace as needed or if full intersection replacement occurs, at that time.									$4,000					
6	Control Cabinet	12	20	8	Good	Good condition.	Recommend that the controller and cabinet will last until the end of normal life. Standard maintenance only.									$25,000					
7	UPS	N/A	N/A	N/A	N/A	There is no UPS at this intersection.	A UPS is not required at this location however it is the Town's standard and should be installed as part of the full intersection replacement.									$10,000					
8	Wiring and Conduit	12	20	8	Good	No wiring issues reported.	No issues were reported for conduit and/or wiring. When a full intersection reconstruction occurs, new wiring should be pulled and conduit replaced as needed.									$20,000					
9	Design Fees	N/A	N/A	N/A	N/A	N/A	Consulting Services for Civil and Electrical Upgrades (designs to be completed year prior to installation)								$30,000						
Subtotal by Year								$0	$0	$0	$2,000	$0	$0	$0	$30,000	$77,800	$0	$0	$15,000		
Grand Total																					$124,800

Town of Tecumseh
Manning Road and St. Gregory's Road

#	ITEM DESCRIPTION	PRESENT AGE	NORMAL LIFE	REMAIN LIFE	STATUS	DESCRIPTION / OBSERVATION	LIFE SPAN ANALYSIS	REPLACEMENT YEAR											POST 2035		GRAND TOTAL
								2025	2026	2027	2028	2029	2030	2031	2032	2033	2034	2035	COST	YEAR	
1	Sectional Steel Traffic Poles (7.0m) 1 N median 1, NE corner, 1 NW corner, 1 S median	19	25	6	Good	Good condition.	Recommend that poles will last until the end of normal life. Standard maintenance only. Replace as needed or if full intersection reconstruction occurs, at that time.								$24,000						
2	Sectional Steel Traffic Poles (10.5m) 1 NE corner, 1 SE corner, 1 SW corner	19	25	6	Good	Good condition. SE pole was replaced in 2023.	Recommend that poles will last until the end of normal life. Standard maintenance only. Replace as needed or if full intersection reconstruction occurs, at that time.								$22,500						
3	Luminaires (3)	10	10	0	Good	Good condition. LED cobra head style luminaires. HPS lights were replaced in 2015.	Recommend that luminaires will last past the end of normal life. LED luminaires should be relamped every 5 years as standard maintenance practice.		$2,000						$4,500				$2,000	2036	
4	Luminaire Mast Arms (3)	19	40	21	Good	Good condition. 2.4m mast arms.	Recommend that mast arms will last until the end of normal life.								$1,800						
5	Signal Heads - Hwy LED 1 westbound, 1 eastbound, 1 northbound, 1 southbound	19	20	1	Good	Signal housings are metal cast aluminum. The paint is peeling in some locations. Otherwise good condition.	Recommend that signal head housing will last past the end of the normal life. Replce as needed or if full intersection reconstruction occurs, at that time. LED modules should be replaced every 5 years as standard maintenance practice.		$3,000						$6,000				$3,000	2036	
6	Signal Heads - Type 9A LED 1 westbound, 1 eastbound, 1 northbound, 1 southbound	19	20	1	Good	Signal housings are metal cast aluminum. The paint is peeling in some locations. Backboard is missing on south median signal head.	Recommend that signal head housing will last past the end of normal life. Recommend replacing southbound signal head backboard. LED modules should be replaced every 5 years as standard maintenance practice.		$2,000						$4,000				$2,000	2036	
7	Aluminum Mast Arms Size varies, quantity of 6	19	40	21	Good	Good condition.	Recommend that mast arms will last until the end of normal life.								$7,500						
8	Signal Heads - Pedestrian (2 section) 2 N/S east side, 2 N/S west side, 2 E/W south side, 2 E/W north side	19	20	1	Good	Metal cast aluminum signal heads. Paint is peeling and some LED's are missing. Visor is missing on some locations.	Recommend that the signal housing will last until the end of normal life. Standard maintenance only. Recommend replacing visors on locations without one. LED module should be replaced every 5 years as standard maintenance practice.		$4,000						$9,200				$4,000	2036	
9	Pedestrian Pushbutton 1 SE corner, 1 SW corner, 1 NE corner, 1 NW corner	19	20	1	Fair	Paint is peeling from the pushbutton units. Pad is worn out on most locations. Operationally still functioning.	Recommend to replace existing pushbuttons with new modules. AODA upgrades should be completed in 2031.	$4,000							$7,500						
10	Handhole 1 N median, 1 S median, 2 NE corner, 2 SE corner, 2 SW corner, 2 NW corner	19	25	6	Good	Good condition.	Recommend that handholes will last until the end of normal life. Standard maintenance only. Replace as needed or if full intersection reconstruction occurs, at that time.								$12,000						
11	Loop Detector 2 westbound, 2 eastbound, 1 each north and south left turn lanes	19	5	0	Good	Good condition, no issues reported.	Recommend that loops will last past the end of normal life. Standard maintenance only. Replace with loops for maintenance. Replace with non-intrusive system with full intersection replacement.								$22,500						
12	Control Cabinet	19	20	1	Good	Controller cabinet mounted on a concrete pad.	A new controller was installed in the existing cabinet at this location. The cabinet and controller should be replaceed with the full intersection reconstruction occurs.								$25,000						
13	UPS	N/A	N/A	N/A	N/A	There is no UPS at this intersection.	A UPS should be added to this intersection within the next 5 years.								$10,000						
14	Wiring and Conduit	19	20	1	Good	No wiring issues reported.	No issues were reported for conduit and/or wiring. When a full intersection reconstruction occurs, new wiring should be pulled and conduit replaced as needed.								$40,000						
15	Geometric Changes for AODA	N/A	N/A	N/A	N/A	N/A	Geometric changes required at the intersection to meet AODA requirements.								$40,000						
16	Design Fees	N/A	N/A	N/A	N/A	N/A	Consulting Services for Civil and Electrical Upgrades (designs to be completed year prior to installation)							$50,000							
Subtotal by Year								$4,000	$11,000	$0	$0	$0	$0	$50,000	$236,500	$0	$0	$0	$11,000		
Grand Total																					$312,500

Town of Tecumseh
Manning Road at Green Valley Plaza

#	ITEM DESCRIPTION	PRESENT AGE	NORMAL LIFE	REMAIN LIFE	STATUS	DESCRIPTION / OBSERVATION	LIFE SPAN ANALYSIS	REPLACEMENT YEAR										POST 2035		GRAND TOTAL
								2025	2026	2027	2028	2029	2030	2031	2032	2033	2034	2035	COST	YEAR	
1	Sectional Steel Traffic Poles (7.0m) 1 N median 1, S median, 1 NW corner, 1 SE corner	20	25	5	Good	Good condition. Power supply/disconnect on SE pole.	Recommend that poles will last until the end of normal life. Standard maintenance only.							$24,000							
2	Sectional Steel Traffic Poles (10.5m) 1 NE corner, 1 SW corner	20	25	5	Good	Good condition.	Recommend that poles will last until the end of normal life. Standard maintenance only.							$15,000							
3	Luminaires (2)	10	10	0	Good	Good condition. LED cobra head style luminaires. HPS lights were replaced in 2015.	Recommend that luminaires will last past the end of normal life. LED luminaires should be relamped every 5 years as standard maintenance practice.	$1,500						$3,000				$1,500			
4	Luminaire Mast Arms (2)	20	40	20	Good	Good condition. 2.4m mast arms.	Recommend that mast arms will last until the end of normal life. Standard maintenance only.							$1,200							
5	Signal Heads - Hwy LED 2 westbound, 2 eastbound, 1 northbound, 1 southbound	20	20	0	Good	Signal housings are metal cast aluminum. The paint is peeling in some locations. Otherwise good condition.	Recommend that signal head housing will last past the end of the normal life. Replace as needed or if full intersection reconstruction occurs, at that time. LED modules should be replaced every 5 years as standard maintenance practice.	$1,500						$3,000				$1,500			
6	Signal Heads - Type 9A LED 1 northbound, 1 southbound	20	20	0	Good	Signal housings are metal cast aluminum. The paint is peeling in some locations. Otherwise good condition.	Recommend that signal head housing will last past the end of the normal life. Replace as needed or if full intersection reconstruction occurs, at that time. LED modules should be replaced every 5 years as standard maintenance practice.	$900						$1,800				$900			
7	Aluminum Mast Arms Size varies, quantity of 6	20	40	20	Good	Good condition.	Recommend that mast arms will last until the end of normal life.												$7,500	2045	
8	Signal Heads - Pedestrian (2 section) 2 N/S east side, 2 N/S west side, 2 E/W south side, 2 E/W north side	20	20	0	Good	Good condition.	Recommend that the signal housing will last past the end of normal life. Standard maintenance only. Replce as needed or if full intersection reconstruction occurs, at that time. .	$4,000						$9,200				$4,000			
9	Pedestrian Pushbutton 1 SE corner, 1 SW corner, 1 NE corner, 1 NW corner	20	20	0	Fair	Paint is peeling from the pushbutton units. Pad is worn out on most locations. Operationally still functioning.	Recommend to replace existing pushbuttons with new modules when full intersection reconstruction occurs.							$7,500							
10	Handhole 1 SE corner, 1 SW corner, 1 NE corner, 1 NW corner, 1 N median, 1 S median	20	25	5	Good	Good condition.	Recommend that handholes will last until the end of normal life. Standard maintenance only. Replace as needed or if full intersection reconstruction occurs, at that time.							$12,000							
11	Loop Detector 2 westbound, 2 eastbound, 1 each north and south left turn lanes	20	5	0	Good	Good condition, no issues reported.	Recommend that loops will last past the end of normal life. Standard maintenance only. Replace with loops for maintenance. Replace with non-intrusive system with full intersection replacement.							$25,000							
12	Control Cabinet	20	20	0	Good	Controller cabinet mounted on a concrete pad.	A new controller was installed in the existing cabinet at this location. The cabinet and controller should be replaced with the full intersection reconstruction occurs.							$25,000							
13	UPS	N/A	20	N/A	N/A	There is no UPS at this intersection.	A UPS should be added to this intersection within 5 years.							$10,000							
14	Wiring and Conduit	20	20	0	Good	No wiring issues reported.	No wiring issues were reported for conduit and/or wiring. The power supply is located on the traffic pole which is not ideal. When a full intersection reconstruction occurs, new wiring should be pulled and conduit replaced as needed.							$40,000							
15	Geometric Changes for AODA	N/A	N/A	N/A	N/A	N/A	Geometric changes required at this intersection to meet AODA changes.							$40,000							
16	Design Fees	N/A	N/A	N/A	N/A	N/A	Consulting Services for Civil and Electrical Upgrades (designs to be completed year prior to installation)						$50,000								
Subtotal by Year								$7,900	$0	$0	$0	$0	$50,000	$216,700	$0	$0	$0	$7,900	$7,500		
Grand Total																					$290,000

Town of Tecumseh
Tecumseh Road East and Manning Road

#	ITEM DESCRIPTION	PRESENT AGE	NORMAL LIFE	REMAIN LIFE	STATUS	DESCRIPTION / OBSERVATION	LIFE SPAN ANALYSIS	REPLACEMENT YEAR											POST 2035		GRAND TOTAL
								2025	2026	2027	2028	2029	2030	2031	2032	2033	2034	2035	COST	YEAR	
1	Sectional Steel Traffic Poles (7.0m) 1 W median, 1 NW corner, 1 N median, 1 NE corner, 1 SE corner, 1 S median	20	25	5	Good	Good condtion.	Recommend that poles will last until the end of normal life. Standard maintenance only.				$36,000										
2	Sectional Steel Traffic Poles (10.5m) 1 SW corner	20	25	5	Good	Good condition.	Recommend that poles will last until the end of normal life. Standard maintenance only.				$7,500										
3	Luminaires (1)	10	10	0	Good	Good condition. LED cobra head style luminaire. HPS light was replaced in 2015.	Recommend that Luminaires will last past the end of normal life. Standard maintenance only. Replace as needed or if full intersection reconstruction occurs, at that time. Luminaires should be relamped every 5 years.				$1,500						$750				
4	Luminaire Mast Arms (1)	20	40	20	Good	Good condition. 2.4m mast arms.	Recommend that mast arms will last until the end of normal life.												$600	2049	
5	Signal Heads - Hwy LED 1 westbound, 1 eastbound, 1 northbound, 1 southbound	20	20	0	Good	Signal housings are metal cast aluminum. The paint is peeling in some locations. Some backboards are missing/damaged. Othherwise good condition.	Recommend that the signal head housing will last past the end of normal life. Replace as needed or if full intersection reconstruction occurs, at that time. LED modules should be replaced every 5 years as standard maintenance practice.				$3,000						$1,500				
6	Signal Heads - Type 9A LED 2 westbound, 1 eastbound, 1 northbound, 1 southbound	20	20	0	Good	Signal housings are metal cast aluminum. The paint is peeling in some locations. Some backboards are missing/damaged. Othherwise good condition.	Recommend that the signal head housing will last past the end of normal life. Replace as needed or if full intersection reconstruction occurs, at that time. LED modules should be replaced every 5 years as standard maintenance practice.				$5,000								$2,500	2039	
7	Aluminum Mast Arms Size varies, quantity of 6	20	40	20	Good	Good condtion.	Recommend that mast arms will last until end of normal life.												$7,500	2045	
8	Signal Heads - Pedestrian (2 section) 2 N/S east side, 2 N/S west side, 2 E/W south side, 2 E/W north side	20	20	0	Good	Paint is peeling off pedestrian signal housings. Some signal modules are missing LED's.	Recommend that the signal housing will last past the end of normal life. Replace as needed or if full intersection reconstruction occurs, at that time. LED modules should be replaced every 5 years as standard maintenance only.				$9,200						$4,000				
9	Pedestrian Pushbutton 1 SE corner, 1 SW corner, 1 NE corner, 1 NW corner	20	20	0	Fair	Paint is peeling from the pushbutton units. Pad is worn out on most locations. Operationally still functioning.	Recommend to replace existing pushbuttons with new modules. AODA upgrades should be completed in 2026.				$7,500										
10	Handhole 1 SE corner, 1 SW corner, 1 NE corner, 1 NW corner, 2 W median, 1 N median, 1 S median	20	25	5	Good	Good condition.	Recommend that handholes will last until the end of normal life. Standard maintenance only. Replace as needed or if full intersection reconstruction occurs, at that time.				$12,000										
11	Loop Detector 3 northbound, 3 southbound, 3 eastbound, 2 westbound	20	5	0	Good	Good condition, no issues reported.	Recommend that loops be replaced by non-intrusive detection technology when the remainder of the intersection is rebuilt.				$25,000										
12	Control Cabinet	20	20	0	Good	Controller cabinet is mounted on a concrete pad.	A new controller was installed in the existing cabinet at this location. The cabinet should be replaceed with the full intersection reconstruction occurs. The controller can be maintained.				$15,000										
13	UPS	20	20	0	Good	A UPS was added when the controller was replaced at this intersection.	UPS batteries should be replaced with the full intersection reconstruction.				$4,000										
14	Wiring and Conduit	20	20	0	Good	No wiring issues were reported.	No issues were reported for conduit and/or wiring. When a full intersection reconstruction occurs, new wiring should be pulled and conduit replaced as neded.				$60,000										
15	Geometric Changes for AODA	N/A	N/A	N/A	N/A	N/A	Geometric changes required at intersection to meet AODA requirements.				$60,000										
16	Design Fees	N/A	N/A	N/A	N/A	N/A	Consulting Services for Civil and Electrical Upgrades (designs to be completed year prior to installation)			$60,000											
Subtotal by Year								$0	$0	$60,000	$245,700	$0	$0	$0	$0	$0	$6,250	$0	$10,600		
Grand Total																					$322,550

Town of Tecumseh
Tecumseh Road East and Green Valley Drive

#	ITEM DESCRIPTION	PRESENT AGE	NORMAL LIFE	REMAIN LIFE	STATUS	DESCRIPTION / OBSERVATION	LIFE SPAN ANALYSIS	REPLACEMENT YEAR											POST 2035		GRAND TOTAL
								2025	2026	2027	2028	2029	2030	2031	2032	2033	2034	2035	COST	YEAR	
1	Sectional Steel Traffic Poles (7.0m) 1 W median, 1 NE corner, 1 E median, 1 SW corner	19	25	6	Good	Good condition. Pole on west median was replaced in 2024.	Recommend that poles will last until the end of normal life. Standard maintenance only.								$24,000						
2	Sectional Steel Traffic Poles (10.5m) 1 NW corner, 1 SE corner	19	25	6	Good	Good condition.	Recommend that poles will last until the end of normal life. Standard maintenance only.								$15,000						
3	Luminaires (2)	10	10	0	Good	Good condition. LED cobra head style luminaire. HPS lights were replaced in 2015.	Recommend that luminaires will last past the end of normal life. LED luminaires should be relamped every 5 years as standard maintenance practice.	$1,500							$3,000			$1,500			
4	Luminaire Mast Arms (2)	19	40	21	Good	Good condition. 2.4m mast arms.	Recommend mast arms will last until the end of normal life.												$600	2046	
5	Signal Heads - Hwy LED 2 northbound, 2 southbound, 2 westbound, 1 eastbound	19	20	1	Fair	Signal head housing and LED modules are original to intersection. Paint is peeling off signal housings. Damaged backboard on southbound signal head.	Recommend that the signal head housings will last past the end of normal life. LED modules should be replaced every 5 years as standard maintenance practice. It is recommended to replace both the signal housing and LED modules during the changes to the rest of the intersection to save costs.	$2,500							$5,200			$2,500			
6	Signal Heads - Type 9A LED 1 eastbound	19	20	1	Fair	Signal head housing and LED modules are original to intersection.	Recommend that the signal head housings will last past end of normal life. LED modules should be replaced every 5 years as standard maintenance practice. It is recommended to replace both the signal housing and LED modules during the changes to the rest of the intersection to save costs.	$500							$1,000			$500			
7	Aluminum Mast Arms Size varies, quantity of 6	19	40	21	Good	Good condition.	Recommend that mast arms will last until the end of normal life.												$7,500	2046	
8	Signal Heads - Pedestrian (2 section) 2 N/S east side, 2 N/S west side, 2 E/W south side, 2 E/W north side	19	20	1	Fair	Paint is peeling off pedestrian signal housings. Some signal modules are missing LED's.	Recommend that the signal head housings will last past the end of normal life. LED modules should be replaced every 5 years as standard maintenance practice. It is recommended to replace both the signal housing and LED modules during the changes to the rest of the intersection to save costs.	$4,000							$9,200			$4,000			
9	Pedestrian Pushbutton 1 SE corner, 1 SW corner, 1 NE corner, 1 NW corner	19	20	1	Fair	Paint is peeling off the pushbutton units. Pad is worn on most locations. Operationally still functioning.	Recommend to replace existing pushbuttons with new modules within the next year or if full intersection reconstruction occurs, at that time.								$7,500						
10	Handhole 1 SE corner, 1 SW corner, 1 NE corner, 1 NW corner, 1 W median, 1 E median	19	25	6	Good	Good condition. NE manhole is covered by landscaping.	Recommend that handholes will last until the end of normal life. Standard maintenance only. Replace as needed or if full intersection reconstruction occurs, at that time.								$12,000						
11	Loop Detector 2 southbound, 1 northbound, 1 eastbound left turn	19	5	0	Good	Good condition. 2 southbound, possible in northbound.	Recommend that loops will last past the end of normal life. Standard maintenance only. Replace with loops for maintenance. Replace with non-intrusive system with full intersection replacement.								$25,000						
12	Control Cabinet	19	20	1	Good	Controller cabinet mounted on a councrete pad.	Recommend that the controller will last until end of normal life. Standard maintenance only. Replace as needed or if full intersection reconstruction occurs, at that time.								$25,000						
13	UPS	N/A	20	N/A	N/A	There is no UPS at this location.	A UPS should be added to this intersection within 5 years.								$10,000						
14	Wiring and Conduit	19	20	1	Good	No wiring issues reported.	No issues were reported for conduit and/or wiring. When a full intersection reconstruction occurs, new wiring should be pulled and conduit replaced as needed.								$40,000						
15	Geometric Changes for AODA	N/A	N/A	N/A	N/A	N/A	Geometric changes required at intersection to meet AODA requirements.								$40,000						
16	Design Fees	N/A	N/A	N/A	N/A	N/A	Consulting Services for Civil and Electrical Upgrades (designs to be completed year prior to installation)							$50,000							
Subtotal by Year								$8,500	$0	$0	$0	$0	$0	$50,000	$216,900	$0	$0	$8,500	$8,100		
Grand Total																					$292,000

Town of Tecumseh
Tecumseh Road East and Lacasse Boulevard

#	ITEM DESCRIPTION	PRESENT AGE	NORMAL LIFE	REMAIN LIFE	STATUS	DESCRIPTION / OBSERVATION	LIFE SPAN ANALYSIS	REPLACEMENT YEAR											POST 2035		GRAND TOTAL
								2025	2026	2027	2028	2029	2030	2031	2032	2033	2034	2035	COST	YEAR	
1	Sectional Steel Traffic Poles (7.0m) 1 SW corner, 1 SE corner	16	25	9	Good	Good condition. SE pole was replaced in 2022.	Recommend that poles will last until the end of normal life. Standard maintenance only. Replace as needed or if full intersection reconstruction occurs, at that time.									$12,000					
2	Sectional Steel Traffic Poles (10.5m) 1 NW corner, 1 NE corner, 1 SW corner	16	25	9	Good	Good condition. NW pole has a dent in it. Each pole has a 2.4m mast arm and a LED cobra head style luminaire. HPS lights were replaced in 2015.	Recommend that poles will last until the end of normal life. Standard maintenance only. Replace as needed or if full intersection reconstruction occurs, at that time.									$22,500					
3	Luminaires (3)	10	10	0	Good	Good condition. LED cobra head style luminaire. HPS lights were replaced in 2015.	Recommend that Luminaires will last past the end of normal life. Standard maintenance only. Replace as needed or if full intersection reconstruction occurs, at that time. Luminaires should be relamped every 5 years.					$2,000				$4,500			$2,000	2039	
4	Luminaire Mast Arms (3)	16	40	24	Good	Good condition. 2.4m mast arms.	Recommend that mast arms will last until the end of normal life.												$1,800	2049	
5	Signal Heads - Hwy LED 2 westbound, 1 eastbound, 2 southbound	16	20	4	Good	Signal head housing and LED modules are original to intersection. Backboard damaged on eastbound signal head.	Recommend that the signal head housing will last past the end of normal life. Recommend replacing damaged backboard on eastbound signal head. Replace as needed or if full intersection reconstruction occurs, at that time. LED modules should be replaced every 5 years as standard maintenance practice.					$1,900				$3,800			$1,900	2039	
6	Signal Heads - Type 9A LED 2 eastbound	16	20	4	Good	Signal head housing and LED modules are original to intersection.	Recommend that the signal head housing will last past the end of normal life. Replace as needed or if full intersection reconstruction occurs, at that time. LED modules should be replaced every 5 years as standard maintenance practice.					$1,000				$2,000			$1,000	2039	
7	Aluminum Mast Arms Size varies, quantity of 6	16	40	24	Good	Good condition.	Recommend that mast arms will last until the end of normal life.												$7,500	2049	
8	Signal Heads - Pedestrian (1 section) 2 NW corner, 2 NE corner, 1 SW corner, 1 SE corner	16	20	4	Good	Good condition. Visor missing on NE corner signal head. New pedestrian signal head on SE corner.	Recommend that the signal housing will last past the end of normal life. Recommend adding a visor to the NE corner signal head. Replace as needed or if full intersection reconstruction occurs, at that time. LED modules should be replaced every 5 years as standard maintenance practice.					$3,000				$7,500			$3,800	2039	
9	Pedestrian Pushbutton 1 SW corner, 1 NE corner, 1 NW corner, 1 SE corner	16	20	4	Good	Good condition. New pushbutton on SE corner	Recommend to replace existing pushbuttons with new modules when intersection reconstruction occurs.									$7,500					
10	Handhole 1 SE corner, 1 SW corner, 1 NE corner, 2 NW corner	16	25	9	Good	Good condition.	Recommend that handholes will last until the end of normal life. Standard maintenance only. Replace as needed or if full intersection reconstruction occurs, at that time.									$12,000					
11	Loop Detector 2 southbound, 1 eastbound	16	5	0	Good	Good condition, no issues reported.	Recommend that loops will last past the end of normal life. Standard maintenance only. Replace with loops for maintenance. Replace with non-intrusive system with full intersection replacement.									$25,000					
12	Control Cabinet	16	20	4	Good	Controller cabinet mounted on a councrete pad.	Recommend that the controller will last until end of normal life. Standard maintenance only. Replace as needed or if full intersection reconstruction occurs, at that time.									$25,000					
13	UPS	16	20	4	Good	A UPS was added when the controller was replaced at this intersection.	UPS should be replaced at the same time as the controller.									$10,000					
14	Wiring and Conduit	16	20	4	Good	No wiring issues reported.	No issues were reported for conduit and/or wiring. When a full intersection reconstruction occurs, new wiring should be pulled and conduit replaced as needed.									$40,000					
15	Geometric Changes for AODA	N/A	N/A	N/A	N/A	N/A	Geometric changes required at intersection to meet AODA requirements.									$30,000					
16	Design Fees	N/A	N/A	N/A	N/A	N/A	Consulting Services for Civil and Electrical Upgrades (designs to be completed year prior to installation)								$50,000						
Subtotal by Year								$0	$0	$0	$0	$7,900	$0	$0	$50,000	$201,800	$0	$0	$18,000		
Grand Total																					$277,700

Town of Tecumseh
Tecumseh Road East and Shawnee Road

#	ITEM DESCRIPTION	PRESENT AGE	NORMAL LIFE	REMAIN LIFE	STATUS	DESCRIPTION / OBSERVATION	LIFE SPAN ANALYSIS	REPLACEMENT YEAR											POST 2035		GRAND TOTAL
								2025	2026	2027	2028	2029	2030	2031	2032	2033	2034	2035	COST	YEAR	
1	Square Traffic Poles (7.0m) 1 N middle, 1 NE corner, 2 SW corner, 1 SE corner	35	25	0	Poor	Square aluminum poles, painted black, paint peeling. Due to overhead conflict, some mast arms and signal heads are mounted on a joint use, wood, hydro pole.	Recommend to replace existing sqaure poles with new sectional steel poles within the next year during intersection reconstruction.			$30,000												
2	Signal Heads - Hwy LED 2 westbound, 2 eastbound, 2 northbound, 2 southbound	35	20	0	Good	SE signal head has no backboard. NB secondary & WB primary are on wood hydro pole.	Recommend to replace within the next year during intersection reconstruction. LED modules should be replaced every 5 years as standard maintenance practice.			$3,000				$1,500					$1,500	2036	
3	Square Mast Arms Size varies - Quantity of 7	35	40	5	Poor	Square black painted arm; paint is peeling. SW arm is swinging.	Recommend to replace mast arms within the next year.			$9,000												
4	Signal Heads - Pedestrian (2 section) 2 N/S east side, 2 N/S west side, 2 E/W south side	35	20	0	Fair	Multiple signal modules have burnt out LED's. There is a mix of square and circle pedestrian signal heads. Some signal heads are missing visors.	Recommend to replace signal heads within the next year. LED modules should be replaced every 5 years as standard maintenance practice.			$7,000				$3,500					$3,500	2036	
5	Signal Heads - Pedestrian (1 section) 2 E/W north side	10	20	0	Good	Multiple signal modules have burnt out LED's.	Recommend that the signal head housing will last until the end of normal life. Recommend to replace with a 2-section countdown signal head. LED modules should be replaced every 5 years as standard maintenance practice.			$2,100				$1,000					$1,000	2036	
6	Pedestrian Pushbutton 2 SE corner, 2 SW corner, 1 NE corner, 1 NW corner	35	20	0	Fair	Paint is peeling from the pushbutton units. Pad is worn out.	Recommend to replace existing pushbuttons with new modules within the next year. Replacement of pushbuttons may require upgrades to AODA standards.			$11,250												
7	Handhole 1 SE corner, 1 SW corner	35	25	0	Fair	Fair condition, no issues reported.	Recommend to replace within the next year. Standard maintenance only. Replace as needed or if full intersection reconstruction occurs, at that time.			$5,480												
8	Loop Detector 1 northbound	11	5	0	Good	Good condition. Loop was reinstalled as part of Shawnee upgrades in 2014.	Recommend that loops be replaced by non-intrusive detection technology when the remainder of the intersection is rebuilt.			$25,000												
9	Control Cabinet	35	20	0	Fair	2013 controller was struck. Controller mounted on metal stub pole. The controller is located too close to the travelled part of the roadway, it is in danger of being struck again. No wiring issues reported.	Controller is older technology, currently functioning with no issues however replacement parts maybe difficult to obtain. Recommend to replace with a pad mounted controller, new 170 type within the next year.			$25,000												
10	UPS	N/A	20	N/A	N/A	There is no UPS at this intersection.	A UPS should be added to this intersection with the full intersection rebuild.			$10,000												
11	Wiring and Conduit	35	20	0	Good	No wiring isues reported. Conduit is blocked in some runs.	Recommend to replace the wiring and conduit as needed during the changes to the rest of the intersection.			$40,000												
12	Geometric Changes for AODA	N/A	N/A	N/A	N/A	N/A	Geometric changes required at intersection to meet AODA requirements.			$25,000												
13	Design Fees	N/A	N/A	N/A	N/A	N/A	Consulting Services for Civil and Electrical Upgrades (designs to be completed year prior to installation)		$50,000													
Subtotal by Year								$0	$50,000	$192,830	$0	$0	$0	$6,000	$0	$0	$0	$0	$6,000		
Grand Total																					$254,830

Town of Tecumseh
Tecumseh Road East and Southfield Drive

#	ITEM DESCRIPTION	PRESENT AGE	NORMAL LIFE	REMAIN LIFE	STATUS	DESCRIPTION / OBSERVATION	LIFE SPAN ANALYSIS	REPLACEMENT YEAR											POST 2035		GRAND TOTAL
								2025	2026	2027	2028	2029	2030	2031	2032	2033	2034	2035	COST	YEAR	
1	Sectional Steel Traffic Poles (7.0m) 2 W median, 2 NE corner, 2 SW corner, 2 NW corner, 1 N median	18	25	7	Good	Good condition.	Recommend that poles will last until the end of normal life. Standard maintenance only. Replace as needed or if full intersection reconstruction occurs, at that time.										$54,000				
2	Signal Heads - Hwy LED 2 SE corner, 2 SW corner, 2 NE corner, 2 NW corner, 1 N median	18	20	2	Good	Signal housing and LED modules are original to intersection. Backboard missing on westbound signal head.	Recommend that the signal head housings will last past the end of normal life. LED modules should be replaced every 5 years as standard maintenance practice. It is recommended to replace both the signal housing and LED modules during the changes to the rest of the intersection to save costs.	$1,800					$1,800				$3,700				
3	Aluminum Mast Arms Size varies - Quantity of 8	18	40	22	Good	Good condition. NE arm moved a bit.	Recommend that mast arms will last until the end of normal life. Recommend rotating NE arm back to regular position. Standard maintenance only.												$10,000	2047	
4	Signal Heads - Pedestrian (1 section) 2 N/S east side, 2 N/S west side, 2 E/W south side, 2 E/W north side	18	20	2	Good	Good condition.	Recommend that the signal housing will last until end of normal life. Replace as needed or if full intersection reconstruction occurs, at that time. LED modules should be replaced every 5 years as standard maintenance practice.	$4,000					$4,000				$9,200				
5	Pedestrian Pushbutton 1 SE corner, 1 SW corner, 1 NE corner, 1 NW corner	18	20	2	Good	Paint is peeling off the pushbutton units. Pad is worn on most locations. Operationally still functioning.	Recommend to replace existing pushbuttons with new modules during intersection reconstruction. Replacement of pushbuttons may require upgrades to AODA standards.	$4,000									$7,500				
6	Handhole 2 SE corner, 1 SW corner, 1 NE corner, 2 NW corner	18	25	7	Good	Good condition, however it was reported that the handholes are small and difficult to work in.	Recommend that handholes will last until the end of normal life. Standard maintenance only. Replace as needed or if full intersection reconstruction occurs, at that time.										$12,000				
7	Loop Detector 2 southbound, 2 northbound	18	5	0	Good	Good condition, no issues reported.	Recommend that loops will last past the end of normal life. Standard maintenance only. Replace with loops for maintenance. Replace with non-intrusive system with full intersection replacement.										$25,000				
8	Control Cabinet	18	20	2	Good	Controller cabinet mounted on a concrete pad.	Recommend that the controller will last until the end of normal life. Standard maintenance only. Replace as needed or if full intersection reconstruction occurs, at that time.										$25,000				
9	UPS	N/A	20	N/A	N/A	There is no UPS at this intersection.	A UPS should be added to this intersection when the controller is replaced.										$10,000				
10	Wiring and Conduit	18	20	2	Good	No wiring issues reported. Conduit is blocked in some runs.	Recommend to replace the wiring and conduit as needed during the changes to the rest of the intersection.										$40,000				
11	Geometric Changes for AODA	N/A	N/A	N/A	N/A	N/A	Geometric changes required at intersection to meet AODA requirements.										$25,000				
12	Design Fees	N/A	N/A	N/A	N/A	N/A	Consulting Services for Civil and Electrical Upgrades (designs to be completed year prior to installation)									$50,000.0					
Subtotal by Year								$9,800	$0	$0	$0	$0	$5,800	$0	$0	$50,000	$211,400	$0	$10,000		
Grand Total																					$287,000

Town of Tecumseh
Tecumseh Road East and Dorset Park

#	ITEM DESCRIPTION	PRESENT AGE	NORMAL LIFE	REMAIN LIFE	STATUS	DESCRIPTION / OBSERVATION	LIFE SPAN ANALYSIS	REPLACEMENT YEAR											POST 2035		GRAND TOTAL
								2025	2026	2027	2028	2029	2030	2031	2032	2033	2034	2035	COST	YEAR	
1	Sectional Steel Traffic Poles (7.0m) 1 NE corner, 2 NW corner, 1 SE corner, 1 N median	2	25	23	Very Good	Good condition.	Recommend that poles will last until the end of normal life. Standard maintenance only.												$30,000	2043	
2	Sectional Steel Traffic Poles (10.5m) 2 SW corner, 1 SE corner, 1 NE corner	2	25	23	Very Good	Good condition.	Recommend that poles will last until the end of normal life. Standard maintenance only.												$30,000	2043	
	Luminaires (4)	2	10	8	Very Good	Good condition. LED cobra head style luminaires.	Recommend that luminaires will last past the end of normal life. LED's should be relamped every 5 years as standard maintenance practice.			$3,000					$3,000				$6,000	2043	
	Luminaire Mast Arms (4)	2	40	38	Very Good	Good condition. 2.4m mast arms.	Recommend that mast arms will last until the end of normal life.												$2,400	2043	
3	Signal Heads - Hwy LED 2 northbound	2	20	18	Very Good	Signal head housing and LED modules are original to intersection.	Recommend that the signal head housing will last past the end of normal life. LED modules should be replaced every 5 years as standard maintenance practice.			$750					$750				$1,500	2043	
4	Signal Heads - Type 9A LED 2 eastbound, 2 westbound, 2 southbound	2	20	18	Very Good	Signal head housing and LED modules are original to intersection.	Recommend that the signal head housing will last past the end of normal life. LED modules should be replaced every 5 years as standard maintenance practice.			$3,000					$3,000				$6,000	2043	
5	Aluminum Mast Arms Size varies - Quantity of 6	2	40	38	Very Good	Good condition.	Recommend that mast arms will last until the end of normal life.												$7,500	2043	
6	Signal Heads - Pedestrian (2 section) 2 N/S east side, 2 N/S west side, 2 E/W south side, 2 E/W north side	2	20	18	Very Good	Good condition.	Recommend that the signal housing will last until the end of normal life. LED modules should be replaced every 5 years as standard maintenance practice.			$4,000					$4,000				$9,200	2043	
7	Pedestrian Pushbutton 2 SE corner, 2 SW corner, 2 NE corner, 2 NW corner	2	20	18	Very Good	Good condition.	Recommend that pushbuttons will last until the end of normal life.												$15,000	2043	
8	Handhole 2 SE corner, 2 SW corner, 2 NE corner, 2 NW corner	2	25	23	Very Good	Good condition.	Recommend that handholes will last until the end of normal life. Standard maintenance only.												$12,000	2043	
9	Non-Intrusive Vehicle Detection	2	20	18	Very Good	Good condition, no issues reported.	Recommend replacing with new technology with full rebuilt of the intersection.												$25,000	2043	
10	Control Cabinet	2	20	18	Very Good	Controller cabinet mounted on a councrete pad.	Recommend that copntroller will last until the end of normal life. Standard maintenance only.												$25,000	2043	
11	UPS	2	20	18	Very Good	A UPS was added when this intersection was constructed.	UPS should be replaced at the same time as the controller.												$10,000	2043	
12	Wiring and Conduit	2	20	18	Very Good	No wiring issues reported.	No issues were reported for conduit and/or wiring.												$40,000	2043	
13	Design Fees	N/A	N/A	N/A	N/A	N/A	Consulting Services for Civil and Electrical Upgrades (designs to be completed year prior to installation)												$50,000	2042	
Subtotal by Year								$0	$0	$10,750	$0	$0	$0	$0	$10,750	$0	$0	$0	$269,600		
Grand Total																					$291,100