



Township of Gillies

Asset Management Plan

Updated: October 2016

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1. EXECUTIVE SUMMARY

An asset management plan for The Township of Gillies is designed to assist with the maintaining, renewing, replacing, and funding of their assets. The assets included are 4 bridges, approximately 105 lane km of roadway, approximately 105 lane km of ditches (stormwater), 308 culverts, 3 buildings, 1 helipad, 5 equipment, 5 vehicles and 5 street lights.

The assets (except ditches) have been inspected by the Roads Maintenance Coordinator and the results have been inputted into Municipal DataWorks (MDW). The Bridge Condition Index (BCI) and Pavement Condition Index (PCI) have been calculated with MDW.

The asset management plan provides an evaluation of the current performance and characteristics of the assets. It provides recommended levels of service and a basic financial strategy based on this information. This is broken down into work to be done within certain timeframes.

Most of the assets are in fair to good condition; however the following are assets in poor condition:

- RD_0011 Parker Road
- RD_0013 Hymers Fair Drive
- RD_0028 Leeper Road
- and 45 culverts.

The next road inspection should be undertaken in 2019, and the next street light inspection should be undertaken in 2021.

The next bridge, equipment and vehicle inspection should be undertaken in 2015 and the next road and culvert inspection in 2016. The buildings and helipad should be inspected in 2018.

When training opportunities and staff demands permit, municipal employees shall endeavour to become as familiar as possible with MDW and update the information regularly. This will assist with managing the assets and predicting financial needs reasonably well.

2.0 INTRODUCTION

Asset management planning is the process of making the best possible decisions regarding the building, operating, maintaining, renewing, replacing and disposing of infrastructure assets. The objective is to maximize benefits, manage risk, and provide satisfactory levels of service to the public in a sustainable manner. Asset management involves a thorough understanding of the characteristics and condition of infrastructure assets, as well as the service levels expected from them. It also involves setting strategic priorities to optimize decision making about when and how to proceed with investments. Finally, it includes the development of a financial plan, which is the most critical step in putting the plan into action.

Good asset management is essential for all orders of government. It results in informed and strategically sound decisions that optimize investments, better manage risk — including the risk of infrastructure failure — and take into account the potential impact of other factors, such as climate change (e.g., damage due to extreme weather).

2.1 PURPOSE

The purpose of the asset management plan is to establish a workable document which will assist with decisions related to how The Township's infrastructure will be managed and provide the levels of service required to support The Township's goals.

An asset management plan is a business strategy to effectively and efficiently allocate available funds amongst valid and competing asset needs. It links expectations for asset conditions, performance, and availability with management and investment strategies. The asset management plan identifies the recommended work for the assets to perform at the level of service expected.

At the very core of public sector asset management are two fundamental considerations: providing satisfactory levels of service to the public, and ensuring the sustainability of infrastructure assets over the long term.

Asset management planning is the process of making the best possible decisions to achieve these outcomes. Importantly, these decisions are made with consideration to the entire lifecycle of assets, including building, operating, maintaining, renewing, replacing and disposing of infrastructure assets.

Good asset management planning requires an understanding of both the current and desired state of infrastructure, and the service levels that infrastructure provides. This requires an awareness of the condition of the infrastructure, risks related to this infrastructure, and financial considerations related to asset management objectives.

Lastly, asset management planning is about prioritization. A good asset management plan reflects an awareness of the choices that must be made in terms of planning and

investment. A comprehensive asset management plan is one that incorporates all of the aforementioned considerations, and will result in optimized decision-making.

Reflecting all of these considerations in an asset management plan is the critical task to creating an excellent asset management program. This is the goal that we strive to achieve for all municipalities in Ontario, and this discussion paper is meant to help establish a regulation to achieve this goal.

2.2 SCOPE

The Township's assets consist of 4 bridges, approximately 52 km (105 lane km) of roadway, approximately 52 km (105 lane km) of ditches, 308 culverts, 3 buildings, 1 helipad, 5 equipment, and 5 vehicles. The investigation undertaken by the various organizations and staff, with respect to this plan and any conclusions or recommendations made in this plan reflect a combination of professional opinion based on the assets' conditions observed at the time of the inspections and on information available at the time of preparation of this plan. Extrapolation of visual detail data was necessary where there was no access.

The asset management plan is anticipated to be valid for 10 years (2013-2023) with diminishing returns and should be updated regularly. The plan should be evaluated and improved through updated data at every scheduled inspection.

The bridge inspections were performed according to the *Ontario Structure Inspection Manual (OSIM)*; and the road inspections were completed with the *Manual for Condition Rating of Gravel Surface Roads (SP-025)*. The street lights were visually inspected from the ground.

3.0 CURRENT ASSET PERFORMANCE

All assets have a natural service life span. To keep the assets in a safe and usable condition, regular maintenance should be scheduled based on inspection results, and service conditions. According to the Ontario Regulation 104/97, every public bridge in Ontario must undergo an inspection every two years by a trained inspector who is either a professional engineer or under their direction. The inspector reviews and rates each bridge component. Then, the bridge's current condition index is determined.

Similarly, roads, ditches and culverts should be inspected every three years, so that The Township can be aware of changing conditions and can plan maintenance and rehabilitation with confidence. Inspections should be carried out in late spring or in summer conditions to allow for the effects of frost heaving to dissipate, and the road to stabilize.

Buildings, land and streetlights shall be inspected every five years.

The equipment and vehicles are to be inspected yearly for maintenance.

3.1 INVENTORY OF ASSETS

All assets' key inventory information, such as length and location is stored in Municipal DataWorks (MDW). The inventory is listed in section 3.4 of this plan.

Ditches have yet to be entered into MDW.

3.2 ASSETS - CURRENT YEAR VALUE

The asset's estimated current value is taken as the ratio of their condition index and professional opinion of probable replacement cost. Both the estimated remaining useful life and current year value are listed in section 3.4 of this plan.

3.3 ASSET CONDITIONS

The current condition of the bridges was established with the Bridge Condition Index (BCI) as per the Ontario Structure Inspection Manual (OSIM), and the Pavement Condition Index (PCI) was provided as per MTO guidelines.

The current condition of the road was established with the Pavement Condition Index, which was generated by MDW.

The assets are generally in fair to good condition and are providing the expected levels of service.

The assets' condition is presented in section 3.4 of this plan. This plan includes three binders of inspection with photographs:

1. Bridges
2. Roads & Culverts & Ditches
3. Buildings, Helipad, Equipment & Vehicles

3.3.1 Bridge Condition Index

The bridges in The Township were visually inspected where safe access could be gained to determine their current condition and engineering characteristics.

The Bridge Condition Index (BCI) is a planning tool which assists with the scheduling of maintenance and upkeep. The BCI result is organized into ranges from 0 to 100. A higher number indicates a better overall condition. The BCI is a basic economic indication of the general percentage of the current value of an asset to its replacement cost. The current values are determined by the condition of each element required to be inspected and rated. Information data is provided into MDW and a BCI is produced. The Ministry Transportation Ontario's (MTO) guidelines for BCI are summarized in the table below

| BCI | Condition | Significant Maintenance Work Required |
|----------|-----------|---|
| 71 – 100 | Good | Not usually required within the next five years |
| 60 – 70 | Fair | Usually scheduled within the next five years. |
| 0 – 59 | Poor | Usually scheduled within approximately one year |

3.3.2 Pavement Condition Index (PCI) and Riding Condition Rating (RCR)

The Pavement Condition Index is a numerical index between 0 and 100, which is used to indicate the general condition of a roadway. MDW has capabilities to calculate the PCI based on riding comfort and surface conditions. The Pavement Condition Index (PCI) is a simple, convenient and inexpensive way to monitor the condition of the surface of roads, identify maintenance and rehabilitation needs, and ensure that road maintenance budgets are spent wisely. It rates the current condition of the surface of a road network.

The Riding Condition Rating (RCR) is the degree of riding comfort which the pavement provides to the travelling public. During the inspection, the Roads Maintenance Coordinator drove over the road section at the posted speed and classified the riding condition according to the descriptions in the table below. The RCR has also been inputted into MDW and the values for each road can be found in the inspection binder.

| Uniform Description of Riding Condition at Posted Speed | | |
|---|-----------|---|
| RCR | Speed | Guidelines |
| 10 | Excellent | Very smooth ride |
| 7 – 9 | Good | Smooth ride with a few bumps or depressions |
| 4 – 6 | Fair | Still comfortable ride with intermittent bumps or depressions |
| 2 – 3 | Poor | Uncomfortable ride with frequent bumps or depressions |
| 1 | Very Poor | Uncomfortable ride with constant bumps or depressions resulting in rattle and shake of rating vehicle; cannot maintain posted speed and must steer constantly to avoid bumps or depressions |

The PCI is used as a guide for rehabilitation and maintenance decisions. A higher number indicates a better road condition. The table below provides a guideline for the improvements required for various road classifications. Using the PCI can help identify trigger points for preventive maintenance that can stop a road from deteriorating to the point that it needs expensive rehabilitation. It is based on ride comfort at posted speeds and surface conditions such as potholes, washboard, wheel rutting, or distortion.

| PCI | |
|----------|----------------------------|
| Local | Time of Improvement |
| 81 – 100 | Adequate |
| 66 – 80 | 6 to 10 years |
| 46 – 65 | 1 to 5 years |
| 40 – 45 | Rehabilitate within 1 year |

| | |
|--------|---------------------------|
| 0 – 39 | Reconstruct within 1 year |
|--------|---------------------------|

3.3.3 Culverts

The culverts were located using the “GPS Essentials” app on a smartphone. These locations can be found in the inspection binder and in MDW. The culverts were rated as follows:

| Rating | Condition | Time of Improvement | |
|--------|-----------|---------------------------|------------|
| 1 | Very poor | Replacement within 1 year | |
| 2 | Poor | Rehabilitation 1 year | |
| 3 | Fair | Rehabilitation 1 | - 5 years |
| 4 | Good | Rehabilitation 6 | - 10 years |
| 5 | Very Good | Routine Maintenance | |

3.3.4 Buildings, Land, Equipment & Vehicles

The buildings, helipad, equipment and vehicles were rated as follows:

| Rating | Condition | Time of Improvement |
|--------|-----------|---------------------|
| 1 | Poor | 1 year |
| 2 | Fair | 1-5 years |
| 3 | Good | 6-10 years |
| 4 | Excellent | Routine Maintenance |

3.3.5 Street Lights

The street lights were rated on a scale from 1 to 4, where the higher number indicates a better condition. The rating system is a simple way to see the condition of the street lights and whether or not the street lights need maintenance or to be replaced. The values and description can be found in the table below.

| | | | |
|---|-----------|---|---------------------|
| 4 | Excellent | Street light in new or nearly new condition | Routine maintenance |
| 3 | Good | Street light has a few minor problems | 6-10 years |
| 2 | Fair | Street light beginning to deteriorate | 1-5 years |
| 1 | Poor | Street light in need of repair or replacement | 1 year |

3.3.6 Ditches

The ditches were rated on a scale from 1 to 4, where the higher number indicates a better condition. The rating system is a simple way to see the condition of the ditch and whether or not the ditch needs maintenance or to be replaced. The values and description can be found in the table below.

| | | | |
|---|-----------|--|---------------------|
| 4 | Excellent | Ditch in new or nearly new condition | Routine maintenance |
| 3 | Good | Ditch has a few minor problems | 6-10 years |
| 2 | Fair | Ditch beginning to deteriorate | 1-5 years |
| 1 | Poor | Ditch in need of repair or replacement | 1 year |

3.4 ASSET NEEDS

The performance deficiencies and recommended work have been identified in the table below.

According to "Bank of Canada" (www.bankofcanada.ca), Canada's current inflation is 1.2% (June 2013). This rate was applied towards the total recommended work in the near future, except for roads and streetlights which have an updated inflation of 1.5% (June 2016).

The Township of Gillies budgets approximately \$100,000 per year for capital expenditure work.

In the tables below "Routine Maintenance" refers to maintenance work; this is where The Township's road crew may complete the recommended work under the operations budget and not the capital expenditure budget.

To highlight the roads and culverts in worst conditions, the assets are sorted from smallest to largest condition index.

3.4.1 Bridges & Box Culverts

| Asset ID | Name | Type | BCI | Remaining Useful Life (years) | Estimated Current Year Value | Condition | Recommended Work | 1 year | 1 - 5 years | 6 - 10 years |
|----------|--------------------------------|---------|-------|-------------------------------|------------------------------|-----------|--|----------------------------|-------------|--------------|
| BR_001 | Dave's Rd | Bridge | 70.69 | 53 | \$530,200 | Good | Replace missing bolts approaches Re-grade and fix potholes at bridge deck, and abutment bearings Install guiderail at north approach | Maint. Maint. Maint. | \$13,700 | - |
| | | | | | | | Re-install guiderail transition at south approach | - | \$10,000 | - |
| | | | | | | | Re-install east railing with laps in direction of traffic | - | \$6,000 | - |
| | | | | | | | Replace abutment bearings | - | \$15,000 | - |
| | | | | | | | Replace portion of abutment timber crib | - | - | \$6,000 |
| BR_002 | Parker Rd Round Culvert | Culvert | 60 | 30 | \$60,000 | Fair | Remove trees growing on top of culvert | Maint. | - | - |
| | | | | | | | Remove accumulated vegetation at culvert ends | Maint. | - | - |
| | | | | | | | Replace sub-standard barrier system | - | \$24,200 | - |
| BR_003 | Parker Rd Concrete Box Culvert | Culvert | 84.93 | 42 | \$169,700 | Good | Clean fencing at outlet | Maint. | - | - |
| | | | | | | | Install steel beam guiderail | - | \$18,100 | - |
| BR_004 | Neva Rd Concrete Box Culvert | Culvert | 88.91 | 44 | \$177,800 | Good | Remove trees on east side | Maint. | - | - |
| | | | | | | | Install steel beam guiderail | - | \$18,100 | - |

Total - \$105,100 \$6,000

Total with 1.2% inflation - \$108,929 \$6,601

3.4.2 Roads

| Road Name | Road ID | PCI | Length(km) | Remaining Useful Life (Years) | Estimated Current Year Value | Distress Manifestation | Recommended Work | 1 Year | 1 - 5 Years | 6 - 10 Years |
|------------------------|---------|------|------------|-------------------------------|------------------------------|--|---|----------|-------------|--------------|
| Parker Rd | RD_0011 | 41 | 3.8 | 6.15 | \$34,276.00 | • Pavement breakup • Potholes • Distortion • Rutting | Rehabilitation | \$57,000 | | |
| Hymers Fair Dr | RD_0013 | 43.5 | 5.4 | 6.53 | \$51,678.00 | • Potholes • Pavement breakup • Rutting | Rehabilitation | \$81,000 | | |
| Leeper Rd | RD_0028 | 44 | 5.5 | 6.6 | \$53,240.00 | • Wash boarding • Potholes • Pavement breakup | Rehabilitation | \$82,500 | | |
| Couch Rd | RD_0005 | 46 | 3.2 | 6.9 | \$32,384.00 | • Wash boarding • • Potholes • Pavement breakup | Grading with addition of gravel and rolling | | \$16,000 | |
| Neva Rd | RD_0007 | 52.5 | 5.4 | 7.88 | \$62,370.00 | • Pavement breakup • Rutting • Distortion | Grading with addition of gravel and rolling | | \$27,000 | |
| Chimo Rd | RD_0002 | 53.5 | 1.8 | 8.03 | \$21,186.00 | • Distortion • • Pavement breakup | Grading with addition of gravel and rolling | | \$9,000 | |
| Oneill Rd | RD_0003 | 57 | 0.6 | 8.55 | \$7,524.00 | • Pavement breakup • Distortion • Loose gravel | Grading with addition of gravel and rolling | | \$3,000 | |
| Turk Rd | RD_0008 | 57.5 | 1.5 | 8.93 | \$19,635.00 | • Distortion • Pavement breakup | Grading with addition of gravel and rolling | | \$7,500 | |
| Old Silver Mountain Rd | RD_0010 | 59.5 | 2.5 | 8.93 | \$32,725.00 | • Loose gravel • Pavement breakup • Distortion | Grading with addition of gravel and rolling | | \$12,500 | |
| Annala Rd | RD_0009 | 60 | 2.3 | 9 | \$30,360.00 | • Pavement breakup • Reverse crown • Potholes | Grading with addition of gravel and rolling | | \$11,500 | |
| Silvaggio Rd | RD_0025 | 60.5 | 2.4 | 9.08 | \$31,944.00 | • Pavement breakup • Potholes • Rutting | Grading with addition of gravel and rolling | | \$12,000 | |
| Lysak Rd | RD_0022 | 60.5 | 0.1 | 9.08 | \$1,331.00 | • Pavement breakup • Reverse | Grading with addition of gravel | | \$500 | |

| | | | | | | | | | | | | | |
|-----------------|---------|------|-----|-------|-------------|--|--|--|---|--|-----------|-----------|----------|
| Prouty Rd | RD_0023 | 62 | 0.6 | 9.3 | \$8,184.00 | | | | Grading with addition of gravel and rolling | | | \$3,000 | |
| Badger Mine Rd | RD_0012 | 63.5 | 1.7 | 9.53 | \$23,749.00 | | | | Grading with addition of gravel and rolling | | | \$8,500 | |
| Liddicoat Rd | RD_0006 | 64 | 1.1 | 9.6 | \$15,488.00 | | | | Grading with addition of gravel and rolling | | | \$5,500 | |
| Main St | RD_0027 | 67 | 2.2 | 10.05 | \$32,428.00 | | | | Grading with addition of gravel and rolling | | | \$11,000 | |
| Daves Rd | RD_0014 | 67.5 | 1.1 | 10.13 | \$16,335.00 | | | | Grading with addition of gravel and rolling | | | \$5,500 | |
| Haymarsh Rd | RD_0020 | 69 | 0.1 | 10.35 | \$1,518.00 | | | | Grading with addition of gravel and rolling | | | \$500 | |
| Palisades Rd | RD_0017 | 72 | 5.6 | 10.8 | \$88,704.00 | | | | Grading with addition of gravel and rolling | | | \$28,000 | |
| Tomack Rd | RD_0016 | 73.5 | 0.1 | 11.03 | \$1,617.00 | | | | Grading with addition of gravel and rolling | | | \$500 | |
| Mckechnie Rd | RD_0021 | 76 | 0.1 | 11.4 | \$1,672.00 | | | | Grading with addition of gravel and rolling | | | \$500 | |
| Union School Rd | RD_0024 | 77.5 | 1.6 | 11.63 | \$27,280.00 | | | | Grading with addition of gravel and rolling | | | \$8,000 | |
| Moore Rd | RD_0004 | 80 | 0.8 | 12 | \$14,080.00 | | | | Routine Maintenance | | | | |
| Wheat Rd | RD_0026 | 80.5 | 0.9 | 12.08 | \$15,939.00 | | | | Routine Maintenance | | | | |
| Rose Valley Rd | RD_0001 | 84 | 0.5 | 12.6 | \$9,240.00 | | | | Routine Maintenance | | | | |
| Woodbeck Rd | RD_0015 | 88 | 0.8 | 13.2 | \$15,488.00 | | | | Routine Maintenance | | | | |
| West St | RD_0019 | 88 | 0.1 | 13.2 | \$1,936.00 | | | | Routine Maintenance | | | | |
| Pee Dee Rd | RD_0018 | 90 | 0.5 | 13.5 | \$9,900.00 | | | | Routine Maintenance | | | | |
| | | | | | | | | | | | | | |
| | | | | | | | | | Total | | \$220,500 | \$116,000 | \$54,000 |
| | | | | | | | | | Total with 1.5% inflation | | | \$121,298 | \$60,830 |

3.4.3 Culverts

| Asset ID | Asset Name | Condition Index | Length (m) | Diameter (m) | Remaining Useful Life(yrs) | Estimated Current Year Value | Recommended work | 1 - 5 years | | | 6 - 10 years | | |
|----------|----------------|-----------------|------------|--------------|----------------------------|------------------------------|---------------------|-------------|-------------|--------------|--------------|-------------|--------------|
| | | | | | | | | 1 year | 1 - 5 years | 6 - 10 years | 1 year | 1 - 5 years | 6 - 10 years |
| CV 0121A | TURK ROAD | 3 | 12.192 | 0.457 | 21 | \$1,300 | Rehabilitation | | \$500 | | | | |
| CV 0187A | ROSE VALLEY RD | 4 | 12.192 | 0.457 | 28 | \$1,700 | Rehabilitation | | | | | \$500 | |
| CV_0001 | SILVAGGIO RD | 2 | 12.192 | 0.457 | 14 | \$800 | Rehabilitation | \$500 | | | | | |
| CV_0002 | SILVAGGIO RD | 3 | 12.192 | 0.61 | 21 | \$1,300 | Rehabilitation | | \$800 | | | | |
| CV_0003 | SILVAGGIO RD | 1 | 12.192 | 0.61 | 7 | \$400 | Replacement | \$2,500 | | | | | |
| CV_0004 | SILVAGGIO RD | 1 | 12.192 | 0.61 | 7 | \$400 | Replacement | \$2,500 | | | | | |
| CV_0005 | SILVAGGIO RD | 3 | 15.24 | 1.829 | 21 | \$5,500 | Rehabilitation | | \$6,600 | | | | |
| CV_0006 | SILVAGGIO RD | 5 | 15.24 | 0.914 | 35 | \$3,800 | Routine Maintenance | | | | | | |
| CV_0007 | LIDDICOAT RD | 3 | 9.144 | 0.381 | 21 | \$1,000 | Rehabilitation | | \$400 | | | | |
| CV_0008 | LIDDICOAT RD | 3 | 9.144 | 0.381 | 21 | \$1,000 | Rehabilitation | | \$400 | | | | |
| CV_0009 | LIDDICOAT RD | 4 | 12.192 | 0.559 | 28 | \$1,700 | Rehabilitation | | | | | \$700 | |
| CV_0010 | LIDDICOAT RD | 3 | 9.144 | 0.381 | 21 | \$1,000 | Rehabilitation | | \$400 | | | | |
| CV_0011 | LIDDICOAT RD | 1 | 9.144 | 0.381 | 7 | \$300 | Replacement | \$1,600 | | | | | |

| | | | | | | | | | | |
|---------|----------------|---|--------|-------|----|---------|----------------|---------|---------|---------|
| CV_0012 | PEE DEE RD | 2 | 12.192 | 0.736 | 14 | \$1,200 | Rehabilitation | \$1,100 | | |
| CV_0013 | PEE DEE RD | 2 | 12.192 | 0.711 | 14 | \$1,200 | Rehabilitation | \$1,100 | | |
| CV_0014 | PEE DEE RD | 4 | 12.192 | 0.736 | 28 | \$2,400 | Rehabilitation | | | \$1,100 |
| CV_0015 | PEE DEE RD | 3 | 12.192 | 0.762 | 21 | \$1,800 | Rehabilitation | | \$1,100 | |
| CV_0016 | PEE DEE RD | 3 | 12.192 | 0.762 | 21 | \$1,800 | Rehabilitation | | \$1,100 | |
| CV_0017 | WEST ST | 3 | 9.144 | 0.457 | 21 | \$1,000 | Rehabilitation | | \$500 | |
| CV_0018 | MCKECHNIE RD | 3 | 9.144 | 0.457 | 21 | \$1,000 | Rehabilitation | | \$500 | |
| CV_0019 | MCKECHNIE RD | 1 | 9.144 | 0.457 | 7 | \$300 | Replacement | \$1,600 | | |
| CV_0020 | TOMACK RD | 2 | 9.144 | 0.457 | 14 | \$600 | Rehabilitation | \$500 | | |
| CV_0021 | HYMERS FAIR DR | 2 | 12.192 | 0.457 | 14 | \$800 | Rehabilitation | \$500 | | |
| CV_0022 | HYMERS FAIR DR | 1 | 12.192 | 0.457 | 7 | \$400 | Replacement | \$2,100 | | |
| CV_0023 | HYMERS FAIR DR | 4 | 12.192 | 0.457 | 28 | \$1,700 | Rehabilitation | | | \$500 |
| CV_0024 | HYMERS FAIR DR | 3 | 12.192 | 0.457 | 21 | \$1,300 | Rehabilitation | | \$500 | |
| CV_0025 | HYMERS FAIR DR | 3 | 15.24 | 0.914 | 21 | \$2,300 | Rehabilitation | | \$1,400 | |
| CV_0026 | HYMERS FAIR DR | 1 | 12.192 | 0.457 | 7 | \$400 | Replacement | \$2,100 | | |
| CV_0027 | HYMERS FAIR DR | 3 | 12.192 | 0.762 | 21 | \$1,800 | Rehabilitation | | \$1,100 | |

| | | | | | | | | | |
|---------|-------------------|---|--------|-------|----|----------|----------------|---------|----------|
| CV_0028 | HYMERS FAIR DR | 3 | 12.192 | 0.61 | 21 | \$1,300 | Rehabilitation | \$800 | |
| CV_0029 | HYMERS FAIR DR | 2 | 12.192 | 0.61 | 14 | \$800 | Rehabilitation | \$800 | |
| CV_0030 | HYMERS FAIR DR | 2 | 9.144 | 0.381 | 14 | \$600 | Rehabilitation | \$400 | |
| CV_0031 | HYMERS FAIR DR | 3 | 9.144 | 0.381 | 21 | \$1,000 | Rehabilitation | \$400 | |
| CV_0032 | HYMERS FAIR DR | 4 | 9.144 | 0.61 | 28 | \$1,300 | Rehabilitation | | \$800 |
| CV_0033 | HYMERS FAIR DR | 1 | 9.144 | 0.381 | 7 | \$300 | Replacement | \$1,600 | |
| CV_0034 | HYMERS FAIR DR | 1 | 9.144 | 0.711 | 7 | \$500 | Replacement | \$2,300 | |
| CV_0035 | HYMERS FAIR DR | 4 | 12.192 | 0.61 | 28 | \$1,700 | Rehabilitation | | \$800 |
| CV_0036 | HYMERS FAIR DR | 2 | 15.24 | 0.914 | 14 | \$1,500 | Rehabilitation | \$1,400 | |
| CV_0037 | HYMERS FAIR DR | 3 | 12.192 | 0.61 | 21 | \$1,300 | Rehabilitation | \$800 | |
| CV_0038 | HYMERS FAIR DR | 4 | 12.192 | 0.762 | 28 | \$2,400 | Rehabilitation | | \$1,100 |
| CV_0039 | HYMERS FAIR DR | 3 | 12.192 | 0.61 | 21 | \$1,300 | Rehabilitation | \$800 | |
| CV_0040 | HYMERS FAIR DR | 3 | 12.192 | 0.914 | 21 | \$1,800 | Rehabilitation | \$1,400 | |
| CV_0041 | HYMERS FAIR DR | 3 | 9.144 | 0.457 | 21 | \$1,000 | Rehabilitation | \$500 | |
| CV_0042 | HYMERS FAIR DR | 4 | 15.24 | 2.438 | 28 | \$11,000 | Rehabilitation | | \$13,200 |
| CV_0043 | HYMERS FAIR DR | 2 | 12.192 | 0.61 | 14 | \$800 | Rehabilitation | \$800 | |

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|---------|-------------------|---|--------|-------|----|---------|----------------|----------|--|
| CV_0044 | HYMERS FAIR DR | 3 | 12.192 | 0.457 | 21 | \$1,300 | Rehabilitation | \$500 | |
| CV_0045 | HYMERS FAIR DR | 3 | 12.192 | 0.457 | 21 | \$1,300 | Rehabilitation | \$500 | |
| CV_0046 | HYMERS FAIR DR | 3 | 12.192 | 1.219 | 21 | \$2,800 | Rehabilitation | \$2,800 | |
| CV_0047 | HYMERS FAIR DR | 2 | 9.144 | 0.381 | 14 | \$600 | Rehabilitation | \$400 | |
| CV_0048 | HYMERS FAIR DR | 2 | 9.144 | 0.457 | 14 | \$600 | Rehabilitation | \$500 | |
| CV_0049 | PARKER RD | 3 | 12.192 | 0.61 | 21 | \$1,300 | Rehabilitation | \$800 | |
| CV_0050 | PARKER RD | 1 | 12.192 | 0.457 | 7 | \$400 | Replacement | \$2,100 | |
| CV_0052 | PARKER RD | 2 | 12.192 | 0.457 | 14 | \$800 | Rehabilitation | \$500 | |
| CV_0053 | PARKER RD | 3 | 9.144 | 0.457 | 21 | \$1,000 | Replacement | \$1,600 | |
| CV_0054 | PARKER RD | 1 | 9.144 | 0.381 | 7 | \$300 | Replacement | \$1,600 | |
| CV_0055 | PARKER RD | 3 | 12.192 | 2 | 21 | \$5,100 | Replacement | \$25,000 | |
| CV_0056 | PARKER RD | 2 | 9.144 | 0.381 | 14 | \$600 | Rehabilitation | \$400 | |
| CV_0057 | PARKER RD | 1 | 9.144 | 0.381 | 7 | \$300 | Replacement | \$1,600 | |
| CV_0058 | PARKER RD | 3 | 15.24 | 0.914 | 21 | \$2,300 | Rehabilitation | \$1,400 | |
| CV_0059 | PARKER RD | 1 | 9.144 | 0.457 | 7 | \$300 | Replacement | \$1,600 | |
| CV_0060 | PARKER RD | 1 | 12.192 | 0.457 | 7 | \$400 | Replacement | \$2,100 | |

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|---------|--------------|---|--------|-------|----|---------|----------------|---------|-------|-------|
| CV_0061 | PARKER RD | 1 | 15.24 | 0.914 | 7 | \$800 | Replacement | \$3,800 | | |
| CV_0063 | PARKER RD | 3 | 9.144 | 0.381 | 21 | \$1,000 | Rehabilitation | | \$400 | |
| CV_0064 | PARKER RD | 1 | 9.144 | 0.381 | 7 | \$300 | Replacement | \$1,600 | | |
| CV_0065 | PARKER RD | 4 | 12.192 | 0.457 | 28 | \$1,700 | Rehabilitation | | | \$500 |
| CV_0066 | PARKER RD | 3 | 9.144 | 0.381 | 21 | \$1,000 | Rehabilitation | | \$400 | |
| CV_0067 | PARKER RD | 3 | 9.144 | 0.381 | 21 | \$1,000 | Rehabilitation | | \$400 | |
| CV_0068 | PARKER RD | 2 | 12.192 | 0.457 | 14 | \$800 | Rehabilitation | \$500 | | |
| CV_0069 | PARKER RD | 3 | 9.144 | 0.381 | 21 | \$1,000 | Rehabilitation | | \$400 | |
| CV_0070 | PARKER RD | 3 | 9.144 | 0.457 | 21 | \$1,000 | Rehabilitation | | \$500 | |
| CV_0071 | PARKER RD | 4 | 12.192 | 0.457 | 28 | \$1,700 | Rehabilitation | | | \$500 |
| CV_0072 | PARKER RD | 3 | 12.192 | 0.381 | 21 | \$1,300 | Rehabilitation | | \$400 | |
| CV_0073 | PALISADES RD | 1 | 9.144 | 0.381 | 7 | \$300 | Replacement | \$1,600 | | |
| CV_0074 | PALISADES RD | 4 | 12.192 | 0.457 | 28 | \$1,700 | Rehabilitation | | | \$500 |
| CV_0075 | PALISADES RD | 1 | 12.192 | 0.457 | 7 | \$400 | Replacement | \$2,100 | | |
| CV_0076 | PALISADES RD | 3 | 12.192 | 0.457 | 21 | \$1,300 | Rehabilitation | | \$500 | |
| CV_0077 | PALISADES RD | 3 | 9.144 | 0.381 | 21 | \$1,000 | Rehabilitation | | \$400 | |

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|---------|--------------|---|--------|-------|----|---------|----------------|---------|-------|-------|
| CV_0078 | PALISADES RD | 1 | 9.144 | 0.381 | 7 | \$300 | Replacement | \$1,600 | | |
| CV_0079 | PALISADES RD | 3 | 9.144 | 0.457 | 21 | \$1,000 | Rehabilitation | | \$500 | |
| CV_0080 | PALISADES RD | 3 | 9.144 | 0.457 | 21 | \$1,000 | Rehabilitation | | \$500 | |
| CV_0081 | PALISADES RD | 4 | 12.192 | 0.457 | 28 | \$1,700 | Rehabilitation | | | \$500 |
| CV_0082 | WOODBEEK RD | 1 | 9.144 | 0.381 | 7 | \$300 | Replacement | \$1,600 | | |
| CV_0083 | WOODBEEK RD | 3 | 12.192 | 0.457 | 21 | \$1,300 | Rehabilitation | | \$500 | |
| CV_0084 | WOODBEEK RD | 2 | 12.192 | 0.457 | 14 | \$800 | Rehabilitation | \$500 | | |
| CV_0085 | WOODBEEK RD | 2 | 12.192 | 0.457 | 14 | \$800 | Rehabilitation | \$500 | | |
| CV_0086 | WOODBEEK RD | 3 | 12.192 | 0.457 | 21 | \$1,300 | Rehabilitation | | \$500 | |
| CV_0087 | WOODBEEK RD | 1 | 12.192 | 0.457 | 7 | \$400 | Replacement | \$2,100 | | |
| CV_0088 | WOODBEEK RD | 3 | 12.192 | 0.457 | 21 | \$1,300 | Rehabilitation | | \$500 | |
| CV_0089 | NEVA RD | 3 | 12.192 | 0.457 | 21 | \$1,300 | Rehabilitation | | \$500 | |
| CV_0090 | NEVA RD | 3 | 9.144 | 0.381 | 21 | \$1,000 | Rehabilitation | | \$400 | |
| CV_0091 | NEVA RD | 3 | 12.192 | 0.457 | 21 | \$1,300 | Rehabilitation | | \$500 | |
| CV_0092 | NEVA RD | 1 | 12.192 | 0.457 | 7 | \$400 | Replacement | \$2,100 | | |
| CV_0093 | NEVA RD | 3 | 12.192 | 0.457 | 21 | \$1,300 | Rehabilitation | | \$500 | |

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|---------|---------|---|--------|-------|----|---------|----------------|---------|---------|-------|
| CV_0094 | NEVA RD | 2 | 9.144 | 0.381 | 14 | \$600 | Rehabilitation | \$400 | | |
| CV_0095 | NEVA RD | 3 | 9.144 | 0.381 | 21 | \$1,000 | Rehabilitation | | \$400 | |
| CV_0097 | NEVA RD | 4 | 12.192 | 0.457 | 28 | \$1,700 | Rehabilitation | | | \$500 |
| CV_0098 | NEVA RD | 4 | 9.144 | 0.457 | 28 | \$1,300 | Rehabilitation | | | \$500 |
| CV_0099 | NEVA RD | 2 | 9.144 | 0.381 | 14 | \$600 | Rehabilitation | \$400 | | |
| CV_0100 | NEVA RD | 2 | 12.192 | 0.457 | 14 | \$800 | Rehabilitation | \$500 | | |
| CV_0101 | NEVA RD | 3 | 12.192 | 0.457 | 21 | \$1,300 | Rehabilitation | | \$500 | |
| CV_0102 | NEVA RD | 3 | 9.144 | 0.457 | 21 | \$1,000 | Rehabilitation | | \$500 | |
| CV_0103 | NEVA RD | 1 | 12.192 | 0.457 | 7 | \$400 | Replacement | \$2,100 | | |
| CV_0104 | NEVA RD | 1 | 12.192 | 0.457 | 7 | \$400 | Replacement | \$2,100 | | |
| CV_0105 | NEVA RD | 3 | 12.192 | 0.457 | 21 | \$1,300 | Rehabilitation | | \$500 | |
| CV_0106 | NEVA RD | 2 | 12.192 | 0.457 | 14 | \$800 | Rehabilitation | \$500 | | |
| CV_0107 | NEVA RD | 3 | 12.192 | 0.914 | 21 | \$1,800 | Rehabilitation | | \$1,400 | |
| CV_0108 | NEVA RD | 2 | 12.192 | 0.914 | 14 | \$1,200 | Rehabilitation | \$1,400 | | |
| CV_0109 | NEVA RD | 2 | 12.192 | 0.457 | 14 | \$800 | Rehabilitation | \$500 | | |

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|----------|-----------|---|--------|-------|----|---------|----------------|---------|---------|---------|
| CV_0110 | NEVA RD | 2 | 12.192 | 1.829 | 14 | \$2,900 | Rehabilitation | \$6,600 | | |
| CV_0111 | NEVA RD | 4 | 12.192 | 1.219 | 28 | \$3,700 | Rehabilitation | | | \$2,800 |
| CV_0112 | NEVA RD | 3 | 9.144 | 0.457 | 21 | \$1,000 | Rehabilitation | | \$500 | |
| CV_0113 | NEVA RD | 3 | 12.192 | 0.914 | 21 | \$1,800 | Rehabilitation | | \$1,400 | |
| CV_0113A | NEVA RD | 2 | 12.192 | 0.457 | 14 | \$800 | Rehabilitation | \$500 | | |
| CV_0114 | TURK RD | 2 | 12.192 | 0.457 | 14 | \$800 | Rehabilitation | \$500 | | |
| CV_0115 | TURK RD | 4 | 9.144 | 0.457 | 28 | \$1,300 | Rehabilitation | | | \$500 |
| CV_0116 | TURK RD | 4 | 12.192 | 0.457 | 28 | \$1,700 | Rehabilitation | | | \$500 |
| CV_0117 | TURK RD | 2 | 9.144 | 0.381 | 14 | \$600 | Rehabilitation | \$400 | | |
| CV_0118 | TURK RD | 4 | 12.192 | 0.61 | 28 | \$1,700 | Rehabilitation | | | \$800 |
| CV_0119 | TURK RD | 4 | 12.192 | 0.61 | 28 | \$1,700 | Rehabilitation | | | \$800 |
| CV_0120 | TURK RD | 3 | 12.192 | 0.457 | 21 | \$1,300 | Rehabilitation | | \$500 | |
| CV_0121 | TURK RD | 3 | 9.144 | 0.381 | 21 | \$1,000 | Rehabilitation | | \$400 | |
| CV_0122 | TURK RD | 4 | 12.192 | 0.61 | 28 | \$1,700 | Rehabilitation | | | \$800 |
| CV_0123 | TURK RD | 3 | 9.144 | 0.381 | 21 | \$1,000 | Rehabilitation | | \$400 | |
| CV_0124 | TURK RD | 1 | 12.192 | 0.457 | 7 | \$400 | Replacement | \$2,100 | | |
| CV_0125 | ANNALA RD | 3 | 12.192 | 0.457 | 21 | \$1,300 | Rehabilitation | | \$500 | |
| CV_0126 | ANNALA RD | 3 | 12.192 | 0.457 | 21 | \$1,300 | Rehabilitation | | \$500 | |
| CV_0127 | ANNALA RD | 2 | 9.144 | 0.457 | 14 | \$600 | Rehabilitation | \$500 | | |
| CV_0128 | ANNALA RD | 1 | 12.192 | 1.219 | 7 | \$900 | Replacement | \$4,600 | | |

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|---------|-----------|---|--------|-------|----|---------|----------------|---------|---------|
| CV_0129 | ANNALA RD | 3 | 12.192 | 0.457 | 21 | \$1,300 | Rehabilitation | | \$500 |
| CV_0130 | ANNALA RD | 3 | 12.192 | 0.457 | 21 | \$1,300 | Rehabilitation | | \$500 |
| CV_0131 | ANNALA RD | 3 | 12.192 | 0.457 | 21 | \$1,300 | Rehabilitation | | \$500 |
| CV_0132 | ANNALA RD | 3 | 12.192 | 0.457 | 21 | \$1,300 | Rehabilitation | | \$500 |
| CV_0133 | LEEPER RD | 1 | 12.192 | 0.457 | 7 | \$400 | Replacement | \$2,100 | |
| CV_0134 | LEEPER RD | 3 | 9.144 | 0.559 | 21 | \$1,000 | Rehabilitation | | \$700 |
| CV_0135 | LEEPER RD | 3 | 12.192 | 0.914 | 21 | \$1,800 | Rehabilitation | | \$1,400 |
| CV_0136 | LEEPER RD | 1 | 9.144 | 0.381 | 7 | \$300 | Replacement | \$1,600 | |
| CV_0137 | LEEPER RD | 3 | 12.192 | 0.381 | 21 | \$1,300 | Rehabilitation | | \$400 |
| CV_0138 | LEEPER RD | 3 | 12.192 | 0.457 | 21 | \$1,300 | Rehabilitation | | \$500 |
| CV_0139 | LEEPER RD | 3 | 12.192 | 0.508 | 21 | \$1,300 | Rehabilitation | | \$600 |
| CV_0140 | LEEPER RD | 3 | 12.192 | 0.508 | 21 | \$1,300 | Rehabilitation | | \$600 |
| CV_0141 | LEEPER RD | 1 | 12.192 | 0.381 | 7 | \$400 | Replacement | \$2,100 | |
| CV_0142 | LEEPER RD | 3 | 9.144 | 0.381 | 21 | \$1,000 | Rehabilitation | | \$400 |
| CV_0143 | LEEPER RD | 3 | 9.144 | 0.381 | 21 | \$1,000 | Rehabilitation | | \$400 |
| CV_0144 | LEEPER RD | 2 | 12.192 | 0.457 | 14 | \$800 | Rehabilitation | \$500 | |
| CV_0145 | LEEPER RD | 2 | 12.192 | 0.457 | 14 | \$800 | Rehabilitation | \$500 | |
| CV_0146 | LEEPER RD | 2 | 12.192 | 0.457 | 14 | \$800 | Rehabilitation | \$500 | |
| CV_0147 | LEEPER RD | 4 | 15.24 | 2 | 28 | \$8,600 | Rehabilitation | | \$8,400 |
| CV_0148 | LEEPER RD | 1 | 12.192 | 0.457 | 7 | \$400 | Replacement | \$2,100 | |
| CV_0149 | LEEPER RD | 4 | 9.144 | 0.381 | 28 | \$1,300 | Rehabilitation | | \$400 |

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|---------|-----------|---|--------|-------|----|---------|----------------|---------|-------|---------|
| CV_0150 | LEEPER RD | 2 | 12.192 | 0.457 | 14 | \$800 | Rehabilitation | \$500 | | |
| CV_0151 | LEEPER RD | 3 | 12.192 | 0.305 | 21 | \$1,300 | Rehabilitation | | \$300 | |
| CV_0152 | LEEPER RD | 4 | 12.192 | 0.813 | 28 | \$2,400 | Rehabilitation | | | \$1,200 |
| CV_0153 | LEEPER RD | 3 | 9.144 | 0.457 | 21 | \$1,000 | Rehabilitation | | \$500 | |
| CV_0154 | LEEPER RD | 3 | 9.144 | 0.457 | 21 | \$1,000 | Rehabilitation | | \$500 | |
| CV_0155 | LEEPER RD | 2 | 12.192 | 0.813 | 14 | \$1,200 | Rehabilitation | \$1,200 | | |
| CV_0156 | LEEPER RD | 2 | 12.192 | 0.381 | 14 | \$800 | Rehabilitation | \$400 | | |
| CV_0157 | LEEPER RD | 1 | 9.144 | 0.381 | 7 | \$300 | Replacement | \$1,600 | | |
| CV_0158 | LEEPER RD | 3 | 12.192 | 0.457 | 21 | \$1,300 | Rehabilitation | | \$500 | |
| CV_0159 | LEEPER RD | 3 | 12.192 | 0.457 | 21 | \$1,300 | Rehabilitation | | \$500 | |
| CV_0160 | LEEPER RD | 2 | 12.192 | 0.457 | 14 | \$800 | Rehabilitation | \$500 | | |
| CV_0161 | LEEPER RD | 2 | 12.192 | 0.457 | 14 | \$800 | Rehabilitation | \$500 | | |
| CV_0162 | COUCH RD | 3 | 12.192 | 0.61 | 21 | \$1,300 | Rehabilitation | | \$800 | |
| CV_0163 | COUCH RD | 2 | 12.192 | 0.61 | 14 | \$800 | Rehabilitation | \$800 | | |
| CV_0164 | COUCH RD | 4 | 12.192 | 0.457 | 28 | \$1,700 | Rehabilitation | | | \$500 |

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|---------|----------|---|--------|-------|----|---------|----------------|---------|---------|---------|
| CV_0165 | COUCH RD | 4 | 12.192 | 0.61 | 28 | \$1,700 | Rehabilitation | | | \$800 |
| CV_0166 | COUCH RD | 3 | 12.192 | 0.61 | 21 | \$1,300 | Rehabilitation | | \$800 | |
| CV_0167 | COUCH RD | 2 | 9.144 | 0.381 | 14 | \$600 | Rehabilitation | \$400 | | |
| CV_0168 | COUCH RD | 3 | 12.192 | 0.914 | 21 | \$1,800 | Rehabilitation | | \$1,400 | |
| CV_0169 | COUCH RD | 2 | 9.144 | 0.381 | 14 | \$600 | Rehabilitation | \$400 | | |
| CV_0170 | COUCH RD | 3 | 12.192 | 0.61 | 21 | \$1,300 | Rehabilitation | | \$800 | |
| CV_0171 | COUCH RD | 4 | 12.192 | 1.2 | 28 | \$3,700 | Replacement | | | \$4,600 |
| CV_0172 | COUCH RD | 4 | 12.192 | 0.457 | 28 | \$1,700 | Rehabilitation | | | \$500 |
| CV_0173 | COUCH RD | 4 | 12.192 | 0.61 | 28 | \$1,700 | Rehabilitation | | | \$800 |
| CV_0174 | COUCH RD | 2 | 9.144 | 0.305 | 14 | \$600 | Rehabilitation | \$300 | | |
| CV_0175 | COUCH RD | 1 | 9.144 | 0.381 | 7 | \$300 | Replacement | \$1,600 | | |
| CV_0176 | COUCH RD | 3 | 12.192 | 0.61 | 21 | \$1,300 | Rehabilitation | | \$800 | |
| CV_0177 | COUCH RD | 1 | 9.144 | 0.457 | 7 | \$300 | Replacement | \$1,600 | | |
| CV_0178 | COUCH RD | 2 | 12.192 | 0.457 | 14 | \$800 | Rehabilitation | \$500 | | |
| CV_0179 | COUCH RD | 3 | 12.192 | 0.61 | 21 | \$1,300 | Rehabilitation | | \$800 | |
| CV_0180 | COUCH RD | 1 | 12.192 | 0.61 | 7 | \$400 | Replacement | \$2,500 | | |

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|----------|----------------|---|--------|-------|----|---------|----------------|---------|---------|---------|
| CV_0181 | COUCH RD | 4 | 12.192 | 0.813 | 28 | \$2,400 | Rehabilitation | | | \$1,200 |
| CV_0182 | COUCH RD | 2 | 12.192 | 0.457 | 14 | \$800 | Rehabilitation | \$500 | | |
| CV_0183 | COUCH RD | 4 | 12.192 | 0.457 | 28 | \$1,700 | Rehabilitation | | | \$500 |
| CV_0184 | COUCH RD | 3 | 12.192 | 1.829 | 21 | \$4,400 | Rehabilitation | | \$6,600 | |
| CV_0185 | ROSE VALLEY RD | 3 | 9.144 | 0.457 | 21 | \$1,000 | Rehabilitation | | \$500 | |
| CV_0186 | ROSE VALLEY RD | 2 | 9.144 | 0.381 | 14 | \$600 | Rehabilitation | \$400 | | |
| CV_0187 | ROSE VALLEY RD | 3 | 12.192 | 0.457 | 21 | \$1,300 | Rehabilitation | | \$500 | |
| CV_0188 | ROSE VALLEY RD | 4 | 12.192 | 1.829 | 28 | \$5,800 | Rehabilitation | | | \$6,600 |
| CV_0189 | ROSE VALLEY RD | 2 | 12.192 | 0.457 | 14 | \$800 | Rehabilitation | \$500 | | |
| CV_0190 | ONEILL RD | 1 | 12.192 | 0.457 | 7 | \$400 | Replacement | \$2,100 | | |
| CV_0191 | ONEILL RD | 2 | 9.144 | 0.381 | 14 | \$600 | Rehabilitation | \$400 | | |
| CV_0192 | ONEILL RD | 2 | 12.192 | 0.457 | 14 | \$800 | Rehabilitation | \$500 | | |
| CV_0193 | ONEILL RD | 3 | 12.192 | 0.457 | 21 | \$1,300 | Rehabilitation | | \$500 | |
| CV_0194 | ONEILL RD | 2 | 12.192 | 0.457 | 14 | \$800 | Rehabilitation | \$500 | | |
| CV_0195 | MOORE RD | 1 | 12.192 | 0.457 | 7 | \$400 | Replacement | \$2,100 | | |
| CV_0196 | MOORE RD | 3 | 9.144 | 0.457 | 21 | \$1,000 | Rehabilitation | | \$500 | |
| CV_0196A | MOORE RD | 2 | 12.192 | 0.457 | 14 | \$800 | Rehabilitation | \$500 | | |
| CV_0197 | MOORE RD | 3 | 12.192 | 0.457 | 21 | \$1,300 | Rehabilitation | | \$500 | |
| CV_0197 | MOORE RD | 3 | 12.192 | 0.457 | 21 | \$1,300 | Rehabilitation | | \$500 | |
| CV_0198 | BADGER MINE RD | 4 | 12.192 | 0.457 | 28 | \$1,700 | Rehabilitation | | | \$500 |
| CV_0199 | BADGER MINE RD | 2 | 12.192 | 0.457 | 14 | \$800 | Rehabilitation | \$500 | | |

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|---------|-----------------|---|--------|-------|----|---------|----------------|---------|---------|
| CV_0200 | BADGER MINE RD | 1 | 12.192 | 0.457 | 7 | \$400 | Replacement | \$2,100 | |
| CV_0201 | BADGER MINE RD | 3 | 12.192 | 0.457 | 21 | \$1,300 | Rehabilitation | | \$500 |
| CV_0202 | DAVES RD | 2 | 12.192 | 0.457 | 14 | \$800 | Rehabilitation | \$500 | |
| CV_0203 | DAVES RD | 4 | 12.192 | 1.524 | 28 | \$5,800 | Rehabilitation | | \$5,500 |
| CV_0204 | DAVES RD | 2 | 9.144 | 0.61 | 14 | \$600 | Rehabilitation | \$800 | |
| CV_0205 | DAVES RD | 3 | 12.192 | 0.61 | 21 | \$1,300 | Rehabilitation | | \$800 |
| CV_0206 | DAVES RD | 1 | 12.192 | 0.457 | 7 | \$400 | Replacement | \$2,100 | |
| CV_0207 | UNION SCHOOL RD | 3 | 9.144 | 0.457 | 21 | \$1,000 | Rehabilitation | | \$500 |
| CV_0208 | UNION SCHOOL RD | 3 | 12.192 | 0.914 | 21 | \$1,800 | Rehabilitation | | \$1,400 |
| CV_0209 | UNION SCHOOL RD | 3 | 9.144 | 0.381 | 21 | \$1,000 | Rehabilitation | | \$400 |
| CV_0210 | UNION SCHOOL RD | 3 | 9.144 | 0.381 | 21 | \$1,000 | Rehabilitation | | \$400 |
| CV_0211 | UNION SCHOOL RD | 3 | 12.192 | 0.457 | 21 | \$1,300 | Rehabilitation | | \$500 |
| CV_0212 | UNION SCHOOL RD | 3 | 12.192 | 0.711 | 21 | \$1,800 | Rehabilitation | | \$1,100 |
| CV_0213 | UNION SCHOOL RD | 3 | 9.144 | 0.457 | 21 | \$1,000 | Rehabilitation | | \$500 |
| CV_0214 | UNION SCHOOL RD | 4 | 9.144 | 0.457 | 26 | \$1,300 | Rehabilitation | | \$500 |
| CV_0215 | UNION SCHOOL RD | 3 | 12.192 | 0.457 | 21 | \$1,300 | Rehabilitation | | \$500 |
| CV_0216 | UNION SCHOOL RD | 2 | 12.192 | 0.457 | 14 | \$800 | Rehabilitation | \$500 | |
| CV_0217 | CHIMO RD | 2 | 9.144 | 0.381 | 14 | \$600 | Rehabilitation | \$400 | |
| CV_0218 | CHIMO RD | 3 | 12.192 | 0.457 | 21 | \$1,300 | Rehabilitation | | \$500 |
| CV_0219 | CHIMO RD | 1 | 12.192 | 0.61 | 7 | \$400 | Replacement | \$2,500 | |

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|---------|------------------------|---|--------|-------|----|---------|----------------|---------|---------|
| CV_0220 | CHIMO RD | 2 | 9.144 | 0.305 | 14 | \$600 | Rehabilitation | \$300 | |
| CV_0221 | CHIMO RD | 1 | 12.192 | 1.829 | 14 | \$1,500 | Replacement | \$6,600 | |
| CV_0222 | CHIMO RD | 1 | 12.192 | 1.829 | 14 | \$1,500 | Replacement | \$6,600 | |
| CV_0223 | CHIMO RD | 2 | 9.144 | 0.381 | 14 | \$600 | Rehabilitation | \$400 | |
| CV_0224 | CHIMO RD | 2 | 9.144 | 0.381 | 14 | \$600 | Rehabilitation | \$400 | |
| CV_0225 | CHIMO RD | 3 | 15.24 | 2.134 | 21 | \$6,400 | Rehabilitation | | \$9,000 |
| CV_0226 | CHIMO RD | 2 | 9.144 | 0.457 | 14 | \$600 | Rehabilitation | \$500 | |
| CV_0227 | CHIMO RD | 3 | 9.144 | 0.457 | 21 | \$1,000 | Rehabilitation | | \$500 |
| CV_0228 | CHIMO RD | 2 | 9.144 | 0.381 | 14 | \$600 | Rehabilitation | \$400 | |
| CV_0229 | CHIMO RD | 4 | 12.192 | 0.457 | 28 | \$1,700 | Rehabilitation | | \$500 |
| CV_0230 | CHIMO RD | 2 | 9.144 | 0.381 | 14 | \$600 | Rehabilitation | \$400 | |
| CV_0231 | CHIMO RD | 1 | 9.144 | 0.457 | 7 | \$300 | Replacement | \$1,600 | |
| CV_0232 | CHIMO RD | 3 | 12.192 | 0.457 | 21 | \$1,300 | Rehabilitation | | \$500 |
| CV_0233 | OLD SILVER MOUNTAIN | 3 | 12.192 | 0.787 | 21 | \$1,800 | Rehabilitation | | \$1,200 |
| CV_0234 | OLD SILVER MOUNTAIN | 4 | 12.192 | 0.483 | 28 | \$1,700 | Rehabilitation | | \$500 |
| CV_0235 | OLD SILVER MOUNTAIN | 2 | 9.144 | 0.432 | 14 | \$600 | Rehabilitation | \$500 | |
| CV_0236 | OLD SILVER MOUNTAIN RD | 4 | 9.144 | 0.381 | 28 | \$1,300 | Rehabilitation | | \$400 |
| CV_0237 | OLD SILVER MOUNTAIN | 3 | 9.144 | 0.406 | 21 | \$1,000 | Rehabilitation | | \$400 |
| CV_0238 | OLD SILVER MOUNTAIN | 4 | 15.24 | 1.829 | 28 | \$7,300 | Rehabilitation | | \$6,600 |
| CV_0240 | OLD SILVER MOUNTAIN | 3 | 12.192 | 0.457 | 21 | \$1,300 | Rehabilitation | | \$500 |
| CV_0241 | OLD SILVER MOUNTAIN | 2 | 12.192 | 0.457 | 14 | \$800 | Rehabilitation | \$500 | |
| CV_0242 | OLD SILVER MOUNTAIN | 2 | 12.192 | 0.61 | 14 | \$800 | Rehabilitation | \$800 | |
| CV_0243 | OLD SILVER MOUNTAIN | 3 | 12.192 | 0.61 | 21 | \$1,300 | Rehabilitation | | \$800 |
| CV_0244 | OLD SILVER MOUNTAIN | 4 | 12.192 | 0.457 | 28 | \$1,700 | Rehabilitation | | \$500 |

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|---------|---------------------|---|--------|-------|----|---------|----------------|---------|-------|---------|
| CV_0245 | OLD SILVER MOUNTAIN | 4 | 12.192 | 0.457 | 28 | \$1,700 | Rehabilitation | | | \$500 |
| CV_0246 | OLD SILVER MOUNTAIN | 3 | 12.192 | 0.457 | 21 | \$1,300 | Rehabilitation | | \$500 | |
| CV_0247 | OLD SILVER MOUNTAIN | 4 | 12.192 | 0.457 | 28 | \$1,700 | Rehabilitation | | | \$500 |
| CV_0248 | OLD SILVER MOUNTAIN | 3 | 12.192 | 0.457 | 21 | \$1,300 | Rehabilitation | | \$500 | |
| CV_0249 | OLD SILVER MOUNTAIN | 1 | 12.192 | 0.457 | 7 | \$400 | Replacement | \$2,100 | | |
| CV_0250 | OLD SILVER MOUNTAIN | 3 | 12.192 | 0.61 | 21 | \$1,300 | Rehabilitation | | \$800 | |
| CV_0251 | OLD SILVER MOUNTAIN | 3 | 12.192 | 0.457 | 21 | \$1,300 | Rehabilitation | | \$500 | |
| CV_0252 | PROUTY RD | 4 | 12.192 | 1.219 | 28 | \$3,700 | Rehabilitation | | | \$2,800 |
| CV_0253 | PROUTY RD | 2 | 12.192 | 0.457 | 14 | \$800 | Rehabilitation | \$500 | | |
| CV_0254 | PROUTY RD | 3 | 12.192 | 0.609 | 21 | \$1,300 | Rehabilitation | | \$700 | |
| CV_0255 | PROUTY RD | 3 | 12.192 | 0.305 | 21 | \$1,300 | Rehabilitation | | \$300 | |
| CV_0256 | PROUTY RD | 3 | 9.144 | 0.381 | 21 | \$1,000 | Rehabilitation | | \$400 | |
| CV_0257 | MAIN ST | 4 | 12.192 | 0.457 | 28 | \$1,700 | Rehabilitation | | | \$500 |
| CV_0258 | MAIN ST | 4 | 12.192 | 0.457 | 28 | \$1,700 | Rehabilitation | | | \$500 |
| CV_0259 | MAIN ST | 3 | 9.144 | 0.457 | 21 | \$1,000 | Rehabilitation | | \$500 | |
| CV_0260 | MAIN ST | 2 | 12.192 | 0.61 | 14 | \$800 | Rehabilitation | \$800 | | |
| CV_0261 | MAIN ST | 3 | 12.192 | 0.406 | 21 | \$1,300 | Rehabilitation | | \$400 | |
| CV_0262 | MAIN ST | 2 | 12.192 | 0.457 | 14 | \$800 | Rehabilitation | \$500 | | |
| CV_0263 | MAIN ST | 3 | 9.144 | 0.203 | 21 | \$1,000 | Rehabilitation | | \$200 | |
| CV_0264 | MAIN ST | 4 | 12.192 | 1.219 | 28 | \$3,700 | Rehabilitation | | | \$2,800 |

| | | | | | | | | | |
|---------|--------------|---|--------|-------|----|---------|----------------|---------|---------|
| CV_0265 | MAIN ST | 4 | 12.192 | 1.219 | 28 | \$3,700 | Rehabilitation | | \$2,800 |
| CV_0266 | MAIN ST | 4 | 9.144 | 0.914 | 28 | \$1,800 | Rehabilitation | | \$1,400 |
| CV_0267 | MAIN ST | 4 | 9.144 | 0.914 | 28 | \$1,800 | Rehabilitation | | \$1,400 |
| CV_0268 | MAIN ST | 4 | 9.144 | 1.219 | 28 | \$2,800 | Rehabilitation | | \$2,800 |
| CV_0269 | MAIN ST | 1 | 9.144 | 0.457 | 7 | \$300 | Replacement | \$1,600 | |
| CV_0270 | MAIN ST | 1 | 9.144 | 0.457 | 7 | \$300 | Replacement | \$1,600 | |
| CV_0271 | MAIN ST | 1 | 9.144 | 0.381 | 7 | \$300 | Replacement | \$1,600 | |
| CV_0272 | MAIN ST | 3 | 9.144 | 0.61 | 21 | \$1,000 | Rehabilitation | \$800 | |
| CV_0273 | MAIN ST | 4 | 12.192 | 0.457 | 28 | \$1,700 | Rehabilitation | | \$500 |
| CV_0274 | MAIN ST | 4 | 9.144 | 0.457 | 28 | \$1,300 | Rehabilitation | | \$500 |
| CV_0275 | MAIN ST | 2 | 9.144 | 0.457 | 14 | \$600 | Rehabilitation | \$500 | |
| CV_0276 | MAIN ST | 4 | 9.144 | 0.457 | 28 | \$1,300 | Rehabilitation | | \$500 |
| CV_0277 | MAIN ST | 3 | 12.192 | 0.457 | 21 | \$1,300 | Rehabilitation | \$500 | |
| CV_0278 | PALISADES RD | 1 | 12.192 | 0.457 | 7 | \$400 | Replacement | \$2,100 | |
| CV_0279 | PALISADES RD | 3 | 9.144 | 0.457 | 21 | \$1,000 | Rehabilitation | \$500 | |
| CV_0280 | PALISADES RD | 1 | 12.192 | 0.457 | 7 | \$400 | Replacement | \$2,100 | |
| CV_0281 | PALISADES RD | 3 | 9.144 | 0.381 | 21 | \$1,000 | Rehabilitation | \$400 | |
| CV_0282 | PALISADES RD | 4 | 12.192 | 0.457 | 28 | \$1,700 | Rehabilitation | | \$500 |
| CV_0283 | PALISADES RD | 3 | 12.192 | 0.457 | 21 | \$1,300 | Rehabilitation | \$500 | |
| CV_0284 | PALISADES RD | 4 | 12.192 | 0.914 | 28 | \$2,400 | Rehabilitation | | \$1,400 |
| CV_0285 | PALISADES RD | 3 | 9.144 | 0.457 | 21 | \$1,000 | Rehabilitation | \$500 | |
| CV_0286 | PALISADES RD | 3 | 9.144 | 0.381 | 21 | \$1,000 | Rehabilitation | \$400 | |

| | | | | | | | | | |
|---------|-----------------|---|--------|-------|----|---------|----------------|---------|-------|
| CV_0287 | PALISADES RD | 2 | 12.192 | 0.61 | 14 | \$800 | Rehabilitation | \$800 | |
| CV_0288 | PALISADES RD | 1 | 9.144 | 0.381 | 7 | \$300 | Replacement | \$1,600 | |
| CV_0289 | PALISADES RD | 3 | 9.144 | 0.381 | 21 | \$1,000 | Rehabilitation | | \$400 |
| CV_0290 | PALISADES RD | 3 | 12.192 | 0.457 | 21 | \$1,300 | Rehabilitation | | \$500 |
| CV_0291 | PALISADES RD | 2 | 9.144 | 0.381 | 14 | \$600 | Rehabilitation | \$400 | |
| CV_0292 | PALISADES RD | 3 | 9.144 | 0.61 | 21 | \$1,000 | Rehabilitation | | \$800 |
| CV_0293 | PALISADES RD | 2 | 9.144 | 0.381 | 14 | \$600 | Rehabilitation | \$400 | |
| CV_0294 | PALISADES RD | 4 | 9.144 | 0.457 | 28 | \$1,300 | Rehabilitation | | \$500 |
| CV_0295 | PALISADES RD | 2 | 12.192 | 0.457 | 14 | \$800 | Rehabilitation | \$500 | |
| CV_0296 | PALISADES RD | 4 | 9.144 | 0.457 | 28 | \$1,300 | Rehabilitation | | \$500 |
| CV_0297 | PALISADES RD | 3 | 12.192 | 0.61 | 21 | \$1,300 | Rehabilitation | | \$800 |
| CV_0298 | PALISADES RD | 4 | 12.192 | 0.61 | 28 | \$1,700 | Rehabilitation | | \$800 |
| CV_0299 | PALISADES RD | 4 | 9.144 | 0.457 | 28 | \$1,300 | Rehabilitation | | \$500 |
| CV_0300 | PALISADES RD | 1 | 9.144 | 0.381 | 7 | \$300 | Replacement | \$1,600 | |
| CV_0301 | PALISADES RD | 3 | 9.144 | 0.457 | 21 | \$1,000 | Rehabilitation | | \$500 |
| CV_0302 | PALISADES RD | 4 | 12.192 | 0.61 | 28 | \$1,700 | Rehabilitation | | \$800 |
| CV_0303 | PALISADES RD | 2 | 12.192 | 0.61 | 14 | \$800 | Rehabilitation | \$800 | |
| CV_0304 | PALISADES RD | 2 | 9.144 | 0.381 | 14 | \$600 | Rehabilitation | \$400 | |
| CV_0305 | PALISADES RD | 4 | 12.192 | 0.61 | 28 | \$1,700 | Rehabilitation | | \$800 |

| | | | | | | | | |
|---------|--------------|---|--------|-------|----|---------|----------------|-------|
| CV_0306 | PALISADES RD | 3 | 12.192 | 0.61 | 21 | \$1,300 | Rehabilitation | \$800 |
| CV_0307 | PALISADES RD | 2 | 9.144 | 0.381 | 14 | \$600 | Rehabilitation | \$400 |
| CV_0308 | LYSAK RD | 3 | 9.144 | 0.381 | 21 | \$1,000 | Rehabilitation | \$400 |

Total \$153,700 \$124,300 \$91,700

3.4.4 Buildings

| Asset ID | Name | Condition Index | Remaining Estimated | | Recommended Work | 1 year | 1 - 5 years | 6 - 10 years |
|----------|---------------------|-----------------|---------------------|--------------------|--|--------|-------------|--------------|
| | | | Useful Life (years) | Current Year Value | | | | |
| BD_002 | Public Works Garage | 2 | 30 | \$54,000 | Ensure door closers close doors fully for security | \$50 | - | - |
| | | | | | Clean outdoor outlets of debris | \$50 | - | - |
| | | | | | Patch small cuts in exterior siding | \$200 | - | - |
| | | | | | Install line support for fuel line into building | \$200 | - | - |
| | | | | | Replace/repair window cap trim on west side | \$150 | - | - |
| | | | | | South floor drain has scale/debris to be removed | \$100 | - | - |
| | | | | | Oil interceptors look ready to empty | \$100 | - | - |
| | | | | | Weather-strip at man-doors | \$100 | - | - |
| | | | | | Weather-strip at middle overhead door | \$500 | - | - |
| | | | | | Paint Overhead door frames | \$500 | - | - |
| | | | | | Prime and paint man-doors | \$500 | - | - |

| | | | | | | | | | |
|----------------------------------|-----------|---|----|----------|--|--|---------|---------|---|
| | | | | | | Build new frost box for line at northwest corner of shop | \$500 | - | - |
| | | | | | | Install vehicle exhaust evacuation system | - | \$3,000 | - |
| BD_003 | Fire Hall | 3 | 30 | \$40,000 | | Remove saplings within 3' of building | \$50 | - | - |
| | | | | | | Reinstall intake air for radiant heater between overhead doors 1 and 2 | \$50 | - | - |
| | | | | | | Weather-strip man-door (new sweep) | \$100 | - | - |
| | | | | | | Plug cable hole near man-door | \$50 | - | - |
| | | | | | | Replace missing eaves trough | - | \$200 | - |
| | | | | | | Extend downspout discharges further from foundation | - | \$200 | - |
| | | | | | | Install snow guards on roof | - | \$2,500 | - |
| | | | | | | Renovate overhead door thresholds to slope outside. | - | \$1,000 | - |
| BD_004 | Gazebo | 4 | 25 | \$10,000 | | Remove bird nest from beam | \$50 | - | - |
| Total | | | | | | | \$3,250 | \$6,900 | - |
| Total with 1.2% inflation | | | | | | | - | \$7,151 | - |

3.4.5 Land

| Asset ID | Name | Condition Index | Remaining Useful Life (years) | Estimated Current Year Value | Recommended Work | 1 year | 1 - 5 years | 6 - 10 years |
|----------|---------|-----------------|-------------------------------|------------------------------|---|--------|-------------|--------------|
| LD_005 | Helipad | 3 | 15 | \$14,000 | <ul style="list-style-type: none"> Re-stake marker pylons to ensure they don't blow away in rotor wash | \$500 | - | - |

3.4.6 Equipment

| Asset ID | Asset Name | Condition Index | Remaining Estimated | | Recommended Work | 1 year | 1 - 5 years | 6 - 10 years |
|----------------------------------|-----------------------|-----------------|---------------------|--------------------|---|---------|-------------|--------------|
| | | | Useful Life (years) | Current Year Value | | | | |
| EQ_001 | Recycling Bin Catwalk | 4 | 25 | \$3,500 | Paint, Replace signs | - | - | \$500 |
| EQ_002 | Recycling Bin | 4 | 25 | \$8,000 | Paint | - | - | \$500 |
| | | | | | Door and/or hinge replace. Replace signage | - | - | \$1,000 |
| EQ_003 | Sander Dump Box | 3 | 20 | \$24,000 | Regular maintenance to include chain and hydraulic system inspection | - | \$4,000 | - |
| EQ_004 | Volvo Grader | 3 | 15 | \$90,000 | Regular maintenance to include oil changes, and inspection of belts, tires and lights | \$2,000 | - | - |
| EQ_005 | John Deere Loader | 3 | 10 | \$22,500 | Regular maintenance to include oil changes, and inspection of belts, tires and lights | \$2,000 | - | - |
| Total | | | | | | \$4,000 | \$4,000 | \$2,000 |
| Total with 1.2% inflation | | | | | | - | \$4,146 | \$2,200 |

3.4.7 Vehicles

| Asset ID | Name | Condition | | Remaining | | Recommended Work | 1 year | 1 - 5 years | 6 - 10 years |
|----------------------------------|---------------------|-----------|--|---------------------|------------------------------|--|---------|-------------|--------------|
| | | Index | | Useful Life (years) | Estimated Current Year Value | | | | |
| VH_001 | Fire Tanker | 2 | | 8 | \$11,000 | Regular maintenance to include oil changes, and inspection of belts, tires and lights | \$2,000 | - | - |
| VH_002 | Fire Rescue Vehicle | 2 | | 10 | \$6,000 | General and preventative maintenance is required. The front steering tires should be replaced. There is an oil leak from the rear engine seal that may need to be addressed. | \$900 | - | - |
| VH_003 | Fire Pumper | 4 | | 23 | \$165,000 | Regular maintenance to include oil changes, and inspection of belts, tires and lights. | \$2,000 | | |
| VH_004 | Tandem Truck | 4 | | 25 | \$150,000 | Regular maintenance to include oil changes and inspection of belts, tires and lights | \$2,000 | | |
| VH_005 | Half-ton Truck | 3 | | 4 | \$11,000 | Tire Replacement every 5 years | | \$6,500 | \$6,500 |
| Total | | | | | | | \$9,400 | \$6,500 | \$6,500 |
| Total with 1.2% inflation | | | | | | | - | \$6,737 | \$7,151 |

3.4.8 Street Lights

| Street Light Name | Street Light ID | Coordinates | Rating | Recommended Work | 1 Year | 1-5 Years | 6-10 Years |
|-------------------|-----------------|-----------------------|--------|---------------------------------------|--------|-----------|------------|
| Hymers-01-595 | SL-001 | 48.306175, -89.706837 | 2 | Replace with LED | | \$1,200 | |
| Hymers-02-HFD | SL-002 | 48.308336, -89.709266 | 2 | Replace with LED | | \$1,200 | |
| OSM-588 | SL-003 | 48.280774, -89.743647 | 2 | Replace with LED | | \$1,200 | |
| PAL-595 | SL-004 | 48.236102, -89.700945 | 2 | Replace with LED | | \$1,200 | |
| 608-595 | SL-005 | 48.239537, -89.70084 | 2 | Replace with LED | | \$1,200 | |
| | | | | | | | |
| | | | | Total | | \$6,000 | |
| | | | | Total including 1.5% inflation | | \$6,274 | |

3.4.9 Ditches

| Road Name | Road ID | Condition Rating | Length (km) | Recommended Work | Condition | | |
|------------------------|---------|------------------|-------------|------------------|----------------|-----------------|---------------|
| | | | | | 1 Year | 1 - 5 Years | 6 - 10 Years |
| ANNALA RD | DT_0009 | 2 | 2.3 | | \$11500 | | |
| BADGER MINE RD | DT_0012 | 1 | 1.7 | Rehabilitation | \$8500 | | |
| CHIMO RD | DT_0002 | 1 | 1.8 | Rehabilitation | \$9000 | | |
| COUCH RD | DT_0005 | 1 | 3.2 | Rehabilitation | \$16000 | | |
| DAVES RD | DT_0014 | 2 | 1.1 | | | \$5500 | |
| HAYMARSH RD | DT_0020 | 2 | 0.1 | | | \$500 | |
| HYMERS FAIR DR | DT_0013 | 2 | 5.4 | | | \$27000 | |
| LEEPER RD | DT_0028 | 1 | 5.5 | Rehabilitation | \$27500 | | |
| LIDDICOAT RD | DT_0006 | 1 | 1.1 | Rehabilitation | \$5500 | | |
| LYSAK RD | DT_0022 | 1 | 0.1 | Rehabilitation | \$500 | | |
| MAIN ST | DT_0027 | 1 | 2.2 | Rehabilitation | \$11000 | | |
| MCKECHNIE RD | DT_0021 | 3 | 0.1 | | | \$500 | |
| MOORE RD | DT_0004 | 3 | 0.8 | | | \$4000 | |
| NEVA RD | DT_0007 | 2 | 5.4 | | | \$27000 | |
| OLD SILVER MOUNTAIN RD | DT_0010 | 3 | 2.5 | | | \$12500 | |
| ONEILL RD | DT_0003 | 1 | 0.6 | Rehabilitation | \$3000 | | |
| PALISADES RD | DT_0017 | 3 | 5.6 | | | \$28000 | |
| PARKER RD | DT_0011 | 2 | 3.8 | | | \$19000 | |
| PEE DEE RD | DT_0018 | 3 | 0.5 | | | \$2500 | |
| PROUTY RD | DT_0023 | 2 | 0.6 | Rehabilitation | \$3000 | | |
| ROSE VALLEY RD | DT_0001 | 2 | 0.5 | | | \$2500 | |
| SILVAGGIO RD | DT_0025 | 2 | 2.4 | | | \$12000 | |
| TOMACK RD | DT_0016 | 2 | 0.1 | | | \$500 | |
| TURK RD | DT_0008 | 2 | 1.5 | | | \$7500 | |
| UNION SCHOOL RD | DT_0024 | 3 | 1.6 | | | \$8000 | |
| WEST ST | DT_0019 | 2 | 0.1 | | | \$500 | |
| WHEEL RD | DT_0026 | 2 | 0.9 | | | \$4500 | |
| WOODBEEK RD | DT_0015 | 2 | 0.8 | | | \$4000 | |
| Total | | | | | \$84000 | \$165500 | \$8000 |

3.4.10 Limitations

It must be recognized that the recommended work given as the remedial measure for a particular distress manifestation is not necessarily the ultimate remedy, nor will the treatment necessarily effectively correct the cause or causes of the distress. The recommended work may only slow distress deterioration.

The following is the probable unit costs for the recommended work. These estimates include material and labour.

| | |
|--|-------------|
| <input type="checkbox"/> Road rehabilitation | \$15,000/km |
| o (Additional gravel, grading, and rolling) | |
| <input type="checkbox"/> Grading with addition of gravel and rolling | \$5,000/km |
| o (Light layer of gravel) | |
| <input type="checkbox"/> Ditching | \$5,000/km |
| <input type="checkbox"/> 450 mm culvert | \$175/m |
| <input type="checkbox"/> 600 mm culvert | \$205/m |
| <input type="checkbox"/> 900 mm culvert | \$250/m |
| <input type="checkbox"/> 1200 mm culvert | \$380/m |
| <input type="checkbox"/> 1800 mm culvert | \$600/m |
| <input type="checkbox"/> 2000 mm culvert | \$700/m |
| <input type="checkbox"/> 2400 mm culvert | \$900/m |

The following culvert assets were rated as poor as they were not accessible for inspection or could not be located from the list provided by The Township of Gillies:

- | | | | |
|-------------|---------------|-------------|---------------|
| 1. CV_0004 | Silvaggio Rd. | 12. CV_0136 | Leeper Rd. |
| 2. CV_0011 | Liddicoat Rd. | 13. CV_0157 | Leeper Rd. |
| 3. CV_0052 | Parker Rd. | 14. CV_0175 | Couch Rd. |
| 4. CV_0054 | Parker Rd. | 15. CV_0177 | Couch Rd. |
| 5. CV_0061 | Parker Rd. | 16. CV_0180 | Couch Rd. |
| 6. CV_0064 | Parker Rd. | 17. CV_0269 | Main St. |
| 7. CV_0073 | Palisades Rd. | 18. CV_0270 | Main St. |
| 8. CV_0078 | Palisades Rd. | 19. CV_0271 | Main St. |
| 9. CV_0092 | Neva Rd. | 20. CV_0281 | Palisades Rd. |
| 10. CV_0124 | Turk Rd. | 21. CV_0288 | Palisades Rd. |
| 11. CV_0133 | Leeper Rd. | | |

4.0 PLANNED ACTION STRATEGY

4.1.0 NON-INFRASTRUCTURE SOLUTIONS

Non-infrastructure solutions can produce lower, more sustainable costs in maintaining existing assets. Non-infrastructure solutions include solutions that do not include the physical repairs of the assets. It is an organizational approach that will aid in the future by lowering cost, having organized data, saving time, and therefore resulting in efficiency. Inspection reports should identify the maintenance work required, within a timeframe for the work, and an opinion of probable cost. To extend the service life of an asset, The Township should use the information acquired from the inspections to update their financial plan accordingly and ensure that the plan is implemented. For this Township, it is recommended that staff personnel be trained in using their asset management software, Municipal DataWorks. MDW is a management tool that stores the asset's historical data and provides an organized future path forward.

Municipal DataWorks is a powerful tool dedicated solely to asset management. It has capabilities to analyze and determine condition indexes, current values, useful lives, and much more on a variety of asset types. There are many municipalities that have adopted this management system and tutorial videos are available online and through the developers. The software has the capabilities to store data and show the attributes of an asset, show the condition of an asset and track repairs, and turn data into information useable by policy-makers in understanding the level of investment required to maintain infrastructure.

It is important to accurately keep the Municipal DataWorks up to date; or The Township increases the risk of having inconsistent and inaccurate information produced. This would make the value of assets incorrect and future values very difficult to determine. It also compromises any other asset information such as construction costs, replacement information, or useful life.

Mr. Brian Anderson (brian@ogra.org) of the Ontario Good Roads Association (OGRA) is the primary contact for Municipal DataWorks technical support, and will be able to assist The Township if needed.

4.2.0 MAINTENANCE ACTIVITIES

Regular maintenance is essential to managing municipal assets. The expected level of service often relies on maintenance activities. It is imperative that The Township schedules regular inspections for their assets. Inspectors identify the needs for maintenance work and the required timeframe. They will also identify if immediate action should be taken to address any safety concerns. Regular maintenance can add significant life to assets and save The Township money. Routine maintenance and minor repair work to an element can be normally performed without professional engineering direction.

The following is the recommended inspection schedule for each asset type:

| Type | Schedule | Opinion of Probable Cost |
|----------------------------|---------------|--------------------------|
| Bridges | Every 2 years | \$5,000 |
| Roads & Ditches & Culverts | Every 3 years | \$10,000 |
| Buildings & Helipad | Every 5 years | \$7,000 |
| Equipment & Vehicle | Every year | \$5,000 |
| Street Lights | Every 5 years | \$2,000 |

Whenever possible, inspections shall be carried out in late spring or in summer for a more detailed and accurate result. The information regarding the characteristics, value, and condition of assets should be updated into MDW after every inspection.

4.2.1 Bridges

Preventative actions can have substantial impacts on the life and preservation of the assets. Sand and debris trap moisture and when removed from the structure, it can prevent damages to significant elements. Bridge maintenance may include:

- Repairing impact damage or deterioration
- Ensuring deck drainage is free of debris
- Tightening railing systems to posts
- Regularly removing debris and sand from joints and bearings
- Removing obstructions restricting water flow
- Correcting bumps and depressions occurring at the approaches

4.2.2 Roads

The major objectives for maintaining gravel surfaces are to provide a smooth, safe riding surface free from defects, eliminate hazards to traffic, and protect the investment in the road surface. The maintenance may include:

- Signing/flagging soft wet areas, such as frost boils that move under traffic until the problem is rectified
- Removing rocks greater than 50 mm in diameter that heaved to the surface by frost action or grading
- Maintaining a crown with a crossfall of approximately 2%
- Removing gravel windrows in excess of 100 mm at the outside edge of the road or at intersections
- Applying calcium chloride annually for dust control (0.6 kg/m²)

The work recommended labeled "Grading with addition of gravel and rolling" includes a light layer of gravel.

4.2.3 Ditches & Culverts

The major objective for culvert maintenance is to ensure the flow of surface water running in natural streams or collected on the high side of the right-of-way, or running down the ditch line, under roads or driveway entrances. The maintenance may include:

- Removing obstructions restricting the flow of water through culverts
 - Beaver control (\$4,000/year)
- Repairing damaged embankments at culvert inlets or outlets
- Clearing ditch lines from vegetation growth and obstructions (\$810/km)
- Clearly marking culverts to identify their location

4.2.4 Public Work Garage

Although the garage is an older steel structure, it seems to be in good structural condition with little to no corrosion noted on the exposed structural components. The interior seemed adequately lit, and anecdotally, is comfortably heated in the winter.

There are no major concerns to note. The primary comment would be regarding maintenance on the building, as far as keeping the small items up to date. Two points of preventative maintenance to note would be installing a support bracket to the incoming fuel line to prevent stress and possible failure on the line, or accidental contact from something. The other is replacing the insulated box around the heat traced line at the back of the building. It looks very weathered and not very capable of retaining heat as expected.

A review of the Ontario Building Code may reveal further possible non-compliant issues such as the construction of the handrails and guards on the stairs and

mezzanine, as well as exhaust fan in the washroom, however these items are grandfathered in and will not likely be mandated to change until a renovation is undertaken.

4.2.5 Fire Hall

The fire hall is a more recent wood framed single storey structure in good condition. Maintenance on and around this building is more of a factor than the municipal garage and should be undertaken before winter arrives. Of primary note, the exterior of the building needs saplings and vegetation to be removed or cut back to prevent any deterioration of the subgrade surrounding the foundation with roots and water retention. Also, rainwater needs to be addressed. The eaves trough and downspout discharges need repair or replacement to prevent water erosion around the foundation.

On the interior, there is evidence of environmental issues as they pertain to heat and humidity. Dirt lines at the stud and rafter locations are typically indicators of condensation due to thermal bridging during the heating season. While the indoor air is heated and somewhat moist, the studs are conducting the cold from the outside, causing the moisture to condense along those locations, allowing airborne dirt particles to stick to those lines. It is not an issue in and of itself, but indicates that the envelope and HVAC are not optimized. As it is a little occupied building, a thermal retrofit would not seem to have much return on investment, nor would an upgraded HVAC system; however a dehumidifier may remove some of the dampness. Also, the intakes for the HRV seem to be relatively close to the exhaust for the infrared heaters. This may or may not be an issue, but should be reviewed with a mechanical professional. It is expected that it has been reviewed previously and passed inspection.

4.2.6 Gazebo

The gazebo is a very simple structure consisting of a framed hip roof on four columns. The metal roof has snow guards and the columns and beams are metal wrapped. The only maintenance item is to remove a bird's nest from the beam to prevent any deterioration to the beam. It may also be advisable to remove the built up soil from around the base of the columns where they sit on the concrete posts to prevent any corrosion to the steel post saddle likely used there.

4.2.7 Helipad

The main gravel pad for the helipad is a good and stable base of compacted granular B, with a perimeter ring of marker pylons. There is an additional patient

loading area constructed later with a finer grade of granular that appears less uniform or compacted than the main pad. The pylons seem to be in good condition, but some of the anchors are missing or not fully set in the ground. This would seem to be the main point of maintenance to prevent them blowing away or into something when a helicopter lands.

4.2.8 Sander Dump Box

With an aggressive maintenance schedule and routine inspections this piece of equipment should last the life of the 2014 truck it is mounted on. Regular maintenance includes chain and hydraulic system inspection.

4.2.9 Volvo Grader

The road maintenance equipment is a grader nominal 198 h.p. with 12' moldboard, front pusher blade and wing. This piece of equipment has multiple duties from snow clearing to road maintenance and repair. The average monthly usage is 43 hours. General maintenance is required. Regular maintenance / replacement items may include the following: cutting edges, hydraulic hoses, fittings, pumps, filters, and hydraulic oil. Depending on usage and wear, the tires need to be replaced in the next 5 years. Regular maintenance also includes oil changes, and inspection of belts, tires and lights. With regular preventative maintenance and inspections, this vehicle should be in service for another 15 years.

4.2.10 John Deere Loader

The road maintenance equipment is a front end loader nominal 100 h.p. with 1.5 – 1.8 yard capacity bucket. This piece of equipment has multiple duties from snow clearing and removal, to loading the dump truck with material for road maintenance and repair. The average monthly usage is 30 hours. Regular maintenance includes oil changes, and inspection of belts, tires and lights.

General maintenance required. Regular maintenance / replacement items may include the following: cutting edges, hydraulic hoses, fittings, pumps, filters and hydraulic oil. A center pin rebuild replacement should be scheduled. Front glass needs to be replaced. Depending on usage and wear, the tires may need to be replaced in the next 5 years. However, based on a cost of approximately \$6,000 for 4 new tires, the age and life expectancy of the machine, used tires may be purchased. The unit is in good shape with only 7536 hours of use, but it is 23 years old and parts and repair costs will have to be addressed.

With regular preventative maintenance and inspections this vehicle should be in service for another 7 – 10 years. Repair costs and the frequency of repairs on this 23 years old piece of equipment will start to increase. To invest \$6,000 in tires and the costs for the center pin rebuild in a 23 years old unit worth \$20,000 - \$25,000

may not be advisable. A replacement plan to purchase a newer unit may be a better use of the funds.

4.2.11 Fire Tanker

The fire department tanker truck nominal 200 h.p. gasoline engine with a 5 speed standard transmission has a two speed split rear axle. The vehicle is equipped with a standard 3 person cab and a hydraulic braking system. This vehicle is used by the fire department to shuttle water to emergency incidents and carries auxiliary equipment to an emergency scene. The average monthly usage is unknown at this time, but would be based on the number of emergency calls responded to, and the amount of usage at training sessions.

A used 1500 – 2000 gallon tanker, year 2000 or newer, has an estimated cost of \$90,000 to \$150,000. Depending on age, options and mileage on the vehicle, the cost could be lower. A regular maintenance includes oil changes, and inspection of belts, tires and lights. General and preventative maintenance is required. The front steering tires should be replaced. There is an oil leak from the rear engine seal that may need to be addressed. The body looks to be in good shape with only minimal surface rust showing.

With regular preventative maintenance and inspections, this vehicle should be in service for another 7 years. The unit is in fair to good shape with only 63,571 km on the odometer, but the number of operating hours is usually higher than normal for emergency vehicles. Due to the age of the vehicle, any major repair costs may exceed the value of the vehicle.

4.2.12 Fire Rescue Vehicle

The fire department rescue/utility vehicle, diesel engine has an automatic transmission. The vehicle is equipped with a standard 2 person cab and hydraulic brake system. The cab and chassis are from Ford with the apparatus supplied and installed by Paul Demers Inc. This vehicle was an ambulance and has been converted for use in the Fire service. This vehicle is the fire department's rescue/utility vehicle responding to emergency calls. The average monthly usage is low with extended periods of non-road running use. A new vehicle meeting the requirement of a rescue utility vehicle for fire service may be \$100,000 - \$120,000.

Regular maintenance includes oil changes, and inspection of belts, tires and lights. General and preventative maintenance is required with this vehicle given the high mileage. With regular preventative maintenance and inspections, this vehicle should be in service for another 10 years. The limited use of the vehicle means a longer life,

but also means that regular inspection and maintenance should be performed to ensure the reliability of the equipment. With the high mileage on the vehicle, yearly inspection should be scheduled. Major repair costs may exceed the total value of the vehicle.

4.2.13 Fire Pumper

The fire department pumper truck, nominal 300 h.p. diesel engine has an automatic transmission. The vehicle is equipped with a standard 3 person cab with an air brake system. The cab and chassis are International / Navistar with the fire apparatus supplied and installed by Holland Enterprises. With a 500 GPM pump and a 1,000 gallon tank, this vehicle is the fire department's main emergency vehicle responding to house and wild land fires. The average monthly usage is low with extended periods of non-road use. A new vehicle meeting the requirement of a triple combination pumper and basic option is \$200,000 - \$230,000.

Regular maintenance includes oil changes, and inspection of belts, tires, lights, pump maintenance and testing. General and preventative maintenance is required. With the truck being new, there should be few repairs and only regular maintenance required. With regular preventative maintenance and inspections, this vehicle should be in service for another 23 years. The limited use of the vehicle means a longer life but also means that regular inspection and maintenance should be performed to ensure the reliability of the equipment.

4.2.14 Tandem Truck

This roads truck is a tandem axle drive with regular cab and is also a multi-use truck. It is used daily for the upkeep and maintenance of the roads within The Township. This multi-purpose use includes dump box complete with bi-directional sander, front and wing snow plow attachments. The vehicle is in excellent shape as it has just been purchased.

The regular maintenance includes oil changes and inspection of belts, tires and lights; and a tire replacement every 5 years. General maintenance of attached equipment is required. Regular maintenance / replacement items may include the following: cutting edges, hydraulic hoses, fittings, pumps, filters, and hydraulic oil. With regular maintenance and inspections, this vehicle should be in service for another 25 years. Due to the technologies used, specialized tools and training may be necessary for the maintenance and repair of this equipment.

4.2.15 Half-ton Truck

This roads truck is a 2 wheel drive with regular cab. It is a half-ton pickup truck, used daily for the transportation of personnel and small equipment. It has a 3 person max capacity. It is driven on average 1,300 km per month. This vehicle is in good shape with no visible body damage. The interior is in good shape, all glass is intact, and all tires are in good shape.

Regular maintenance includes oil changes, and inspection of belts, tires and lights. With regular maintenance and inspections, this vehicle should be in service for another 4-5 years.

4.2.16 Street Lights

The Township has five street lights located at various locations. The street lights are installed on of wood poles, which are not owned by The Township. There are three Mercury-Vapour (MV) light fixtures and two High Pressure Sodium (HPS) light fixtures. The street lights are all rated in fair condition, with no immediate maintenance required for them.

4.3 RENEWAL/REHABILITATION ACTIVITIES

Rehabilitation of the assets is necessary when the levels of service do not conform to the standards. Significant repairs designed to extend the life of the asset are determined at every inspection. It is essential to schedule the regular inspections to monitor the asset's conditions.

The rehabilitation activities determined from the field inspection are provided below. The work recommended will improve the asset's rating and help ensure that the asset provides the desired level of service.

Rehabilitation over replacement is advantageous when there are only few components that need repair. Occasionally, the number of repairs is too extensive and rehabilitation is deemed unfeasible. This judgement is different for every case and sometimes replacement is the more cost effective alternative when considering future repairs.

4.3.1 Bridges

| Asset ID | Name | BCI | Work |
|----------|---------------------------------|-------|--|
| BR_001 | Dave's Rd. Bridge | 70.69 | <ul style="list-style-type: none"> → Install guiderail at north approach → Re-install guiderail transition at south approach → Re-install east railing laps in direction of traffic → Replace abutment bearings → Replace portion of abutment timber crib |
| BR_002 | Parker Rd. Round Culvert | 60 | <ul style="list-style-type: none"> → Replace sub-standard barrier system |
| BR_003 | Parker Rd. Concrete Box Culvert | 84.93 | <ul style="list-style-type: none"> → Install steel beam guiderail |
| BR-004 | Neva Rd. Concrete Box Culvert | 88.91 | <ul style="list-style-type: none"> → Install steel beam guiderail |

4.3.2 Roads

It should be understood that the recommended work suggested for gravel roads are short-term. Below is one asset example; see section 3.4.2 for details.

| Asset ID | Name | PCI | Distress Manifestation | Work |
|----------|------------|-----|---|--|
| RD_0009 | Annala Rd. | 45 | <ul style="list-style-type: none"> • Loose gravel • Breakup • Flat/Reverse Crown | <ul style="list-style-type: none"> • Rehabilitation • Additional gravel • Grading & rolling |
| RD_0011 | PARKER RD | 41 | <ul style="list-style-type: none"> • Pavement breakup • Potholes • Distortion • Rutting | <ul style="list-style-type: none"> • Add gravel • Roll • Grade |

General rehabilitation activities may include:

- Correcting the causes of water lying on the surface of the road
- Repairing potholes in excess of 100 mm in depth
- Correcting washboard conditions (corrugations)

4.3.3 Culverts

Rehabilitation of culverts with pipe liners is one method available for extending the life of an existing culvert. The pipe liner's length is three times the size of the culvert's diameter and they are inserted at both the culvert's inlet and outlet. It is often cost effective when compared to complete replacement. Below is one asset example; see section 3.4.3 for details.

| Asset ID | Name | Condition Index | Work |
|----------|-----------|-----------------|--|
| CV_0174 | Couch Rd. | 2 | <ul style="list-style-type: none"> Rehabilitation |

4.3.4 Buildings

| Asset ID | Name | Condition Index | Work |
|----------|---------------------|-----------------|--|
| BD_002 | Public Works Garage | 2 | <ul style="list-style-type: none"> Build new frost box for line at northwest corner of shop Install vehicle exhaust evacuation system |
| BD_003 | Fire Hall | 3 | <ul style="list-style-type: none"> Extend downspout discharges further from foundation Install snow guards on roof Renovate overhead door thresholds to slope outside |

4.3.5 Land

| Asset ID | Name | Condition Index | Work |
|----------|---------|-----------------|---|
| LD_005 | Helipad | 3 | <ul style="list-style-type: none"> Pack and grade patient loading area to more uniform surface |

4.3.6 Ditches

Removing of brush and vegetation is one method available for extending the life of an existing ditch. When deemed necessary, ditches shall be cleaned out by means of an excavator or other piece of heavy equipment.

4.4.0 REPLACEMENT ACTIVITIES

Replacement is considered when extensive damage or deterioration has occurred to the asset. Replacing assets is sometimes costly and requires considerable additional review; such as detailed investigations. These activities are expected to occur once an asset has reached the end of its useful life and renewal/rehabilitation is no longer an option.

At this point in time, replacement is not seen to be a cost effective option for The Township. The roads and street lights are largely still meeting the expected level of service. The assets that are no longer meeting the expectations remain at a level at which they can be rehabilitated to again meet the desired level of service.

Ditches may not be replaced; only rehabilitated or improved.

4.4.1 Culverts

In 2013, GENIVAR Inc. determined 45 culverts should be replaced, including the ones listed in section 3.4.8. It should also be noted that there are four wooden culverts which should be replaced with corrugated steel pipes.

- 1. CV_0053 Parker Rd. 450 mm culvert – 5 years \$1,600
- 2. CV_0055 Parker Rd. 2000 mm culvert – 5 years \$25,000
- 3. CV_0059 Parker Rd. 450 mm culvert – 1 year \$1,600
- 4. CV_0171 Couch Rd. 1200 mm culvert – 10 years \$4,600

Below is one asset example; see section 3.4.3 for details.

| Asset ID | Name | Condition Index | Work |
|----------|---------------|-----------------|---------------|
| CV_0011 | Liddicoat Rd. | 1 | • Replacement |

4.4.2 Public Work Garage

This garage was previously audited and it was noted that it would be more efficient to control the heating by separating the area into two zones; garage bay and human occupancy. Air sealing and insulating the building envelope would also help retain the heat in the garage. With programmable thermostats, the temperature would be controlled more efficiently during the cold weather. Occupancy lighting sensors would eliminate unnecessary energy consumption, and finally, high levels of carbon monoxide and extreme humidity can be addressed with a commercial carbon monoxide detector and a Heat Recovery Ventilation system.

This building may be considered inefficient and a detailed study with life cycle costing is recommended for possible replacement. (\$4,000)

4.4.3 Municipal Office

Although The Township of Gillies once owned and used a stand-alone municipal office building, that property was sold. Municipal Council of the day considered the building at the end of its useful life for municipal purposes. Municipal administration is presently undertaken from leased premises. Two rooms within the Whitefish Valley public school are rented to The Township by the Lakehead District School Board. General repairs and maintenance of the building are undertaken by its owner, the School Board.

While it is physically adequate for staff and Council, the municipal office is deficient as a public service office in that it does not meet the standards that municipalities are required to meet to comply with Accessibility for Ontarians with Disabilities Act, 2005 (S.O. 2005, c. 11). Significant capital expenditures would be required to create accessible entrances and washrooms. The lease does not provide a long term security of tenure to the municipality. The current lease expires on June 30th, 2016. The tenant does not enjoy a right of renewal of the lease, although it can be released on mutual consent.

Without a long term security of tenure in the premises, the municipality is not inclined to make significant capital investments, such as those required for renovations to become AODA compliant.

The Township of Gillies has started to put funds away to replace the municipal office space with owned infrastructure that is compliant with relevant and applicable legislation, however, the amount saved to date does not approach the amount that will be required. (\$300,000)

4.5 DISPOSAL ACTIVITIES

There is no disposal activity anticipated; as the assets generally meet the level of service expected.

The level of service defines the current and future operating conditions of assets using qualitative measures. The operating conditions and level of service are normally defined by The Township, and the characteristics generally include speed, travel time, delay, traffic interruptions, and convenience.

The level of service also describes what the governing body, 'customer' or community wants, how much it will cost to achieve, and whether it is affordable. Therefore, the levels of service should be specific and measurable, and linked to the strategic objectives and outcomes of The Township.

4.6 OVERVIEW OF RISKS

Understanding risks is important to the safety and functionality of the community as it relates to its infrastructure. Having assets perform at the expected level of service is important for The Township. If the assets have to shut down or are compromised, it becomes inconvenient for all.

| Key Indicator | Issue | Potential Impact | Current Controls | Action Plan |
|--------------------------|--|---|---|--|
| Condition Index PCI 45 | Annala Rd. (RD_0009) requires rehabilitation | Road closure will cause inconvenience | Current load limit: 10,000 kg Registered Gross Vehicle Weight(R.G.V.W.) | Rehabilitate road |
| Condition Index PCI 41 | Parker Road(RD_0011) requires rehabilitation | Road closure will cause inconvenience | Current load limit: 10,000 kg Registered Gross Vehicle Weight(R.G.V.W.) | Rehabilitate road |
| Condition Index PCI 43.5 | Hymers Fair Drive(RD_0013) requires rehabilitation | Road closure will cause inconvenience | Current load limit: 10,000 kg Registered Gross Vehicle Weight(R.G.V.W.) | Rehabilitate road |
| Condition Index PCI 67 | Main St (RD_0027) requires rehabilitation | Road Closure has created inconvenience | Road Closed to throughfare traffic with cement barricades | Rehabilitate road (fix steep grade, etc) |
| Condition Index PCI 44 | Leeper Road(RD_0028) requires rehabilitation | Road closure will cause inconvenience | Current load limit: 10,000 kg Registered Gross Vehicle Weight(R.G.V.W.) | Rehabilitate road |
| Condition Index1 | 45 culverts See section3.4.3 | Road closure will cause inconvenience and detours | None | Replace culverts |

5.0 FINANCING STRATEGY

A management strategy of planned actions will enable the assets to provide the desired levels of service and extend their useful lives. The budget values of the past two years were found in The Township of Gillies Budget 2016, approved on June 27, 2016. This forecast will help The Township prepare for expenses associated with maintenance, rehabilitation, and replacement costs. The following demonstrates the work recommended and probable costs: categorized by 1 year, 1 - 5 years, and 6 - 10 years timeframes.

5.1 EXPENDITURE FORECASTS

| Type | Recommended Work | 1 year | 1 – 5 years | 6 – 10 years |
|---|----------------------|-----------|-------------|--------------|
| Maintenance activities and inspections | | | | |
| | Bridges | | \$10,000 | \$15,000 |
| | Roads & Culverts | \$130,000 | \$152,000 | \$292,000 |
| | Buildings & Land | \$3,250 | \$10,700 | \$7,000 |
| | Equipment & Vehicles | \$13,400 | \$31,500 | \$31,500 |
| | Street Lights | - | \$2,000 | \$2,000 |
| Renewal/rehabilitation activities | | | | |
| | Bridges | - | \$105,100 | \$6,000 |
| | Roads | \$220,500 | \$116,000 | \$54,000 |
| | Culverts | 45,800 | \$97,700 | \$87,100 |
| | Buildings & Land | \$1,500 | \$3,200 | - |
| | Street Lights | - | \$6,000 | - |
| | Ditches | \$84,000 | \$165,000 | \$8000 |
| Replacement activities | | | | |
| | Culverts | \$107,900 | \$26,600 | |
| | Buildings | \$4,000 | \$300,000 | \$4,600 |

The Township depends on grants and funding for infrastructure as the tax base is too low to undertake any major projects without it. If these grants were not available, The Township would not have been able to cover the costs. It is understood that The Township of Gillies budgets approximately \$100,000 per year for capital expenditure work. The assets are well maintained and are meeting the level of service expected. However there is a funding shortfall. The Township of Gillies must prioritize the recommended work based on their asset's goals and their level of service expected. This expenditure forecast was developed with section 3.4 and 4.2 of this plan.

6.0 ACCOUNTABILITY AND FEEDBACK

6.1 PERFORMANCE MEASURES

The Township will request condition indexes such as BCI and PCI values at every inspection. These will be an excellent and easy way to monitor the conditions of the assets over the years, and forecast replacement when necessary.

It is also recommended that inspections include recommended work (categorized by 1 year, 1 – 5 years, and 6 – 10 years). If the available funds are not sufficient, then strategic decisions must be made in an effort to maintain the required level of service within The Township. The work must be prioritized by considering The Township's level of service expectations.

6.2 LIFE OF ASSET MANAGEMENT PLAN

6.2.1 Assets excluding roads and streetlights

This plan will cover the period from August 2013 to August 2023 with diminishing returns. The financial needs should be updated when regular inspections are completed and when conditions are re-assessed. It is highly recommended to perform inspections during the spring/summer months for a better representation of the actual conditions.

6.2.3 Roads and Streetlights

This plan will cover the period from August 2016 to August 2026 with diminishing returns. The financial needs should be updated when regular inspections are completed and when conditions are re-assessed. It is highly recommended to perform inspections during the spring/summer months for a better representation of the actual conditions.

6.3 DOCUMENT HISTORY

This consolidated AMP was created using the following documents & updates:

| | | |
|-------------------------|------|-----------------------------------|
| Original AMP (Genivar) | 2013 | initial review of assets |
| Update AMP Report (WSP) | 2016 | updated roads; added streetlights |
| Consolidation/Review | 2016 | |
| Update AMP | 2016 | added ditches |

NOTE: Backup documentation is retained in a binder labelled “Asset Management Plan Amendments – Backup Documentation”

6.4 COLLABORATION OF DOCUMENTS

The AMP is to be used in collaboration with the following documents:.

- Gillies Official Plan
- Gillies Capital Plan
- Government funding ex Gas Tax, OCIF
- Annual Budget

7.0 CONCLUSION

Asset management is one of the most cost effective ways to balance the preservation, upgrade and replacement of assets. The implementation of the plan will provide guidance for The Township of Gillies to meet the asset’s level of service and improve the infrastructure over the timeframe of this plan.

The staff shall continue to use the AMP for long-term transportation planning, capital program development, and performance accountability. Being aware of the conditions and the total costs will improve The Township’s ability to select options for operations, maintenance, renewal and replacement of roads and bridges.

The investigation undertaken by various staff and outside agencies with respect to this plan and any recommendations made in this plan reflect professional opinion based on the sites’ conditions observed at the time of the inspections and on information available at the time of preparation of this plan. Extrapolation of visual detail data was necessary where there was no access.