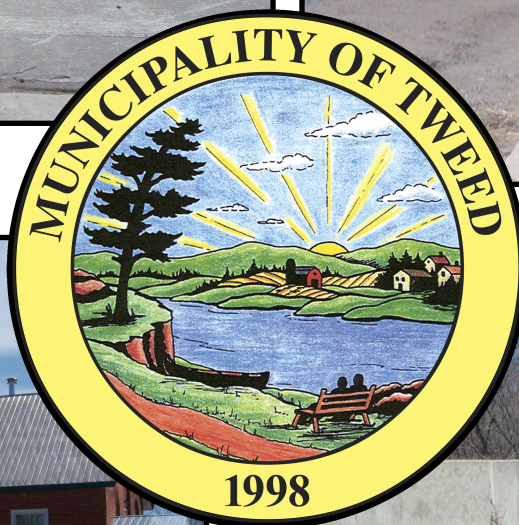


## MUNICIPALITY OF TWEED



# Asset Management Plan

Prepared for: Council of Municipality of Tweed

Prepared by: Asset Management Team, Municipality of Tweed

December 17, 2013

## Final Copy



Supported By:



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## MUNICIPALITY OF TWEED

# EXECUTIVE SUMMARY

The Municipality of Tweed prepared an Asset Management Plan which describes, rates, and prioritizes existing municipal assets; identifies levels of service delivery and management strategies, and outlines present and future financial considerations.

### **The Asset Management Plan is comprised of the following components:**

#### ***Categorization of Infrastructure Assets***

Water Treatment & Distribution	Sidewalks
Wastewater Treatment & Collection	Storm Sewers
Bridges	Buildings & Facilities
Urban Streets	Waste Disposal
Rural Roads- Asphalt	Streetlights
Rural Roads-Tar & Chip	Fleet
Rural Roads- Gravel	Pits

#### ***State of Local Infrastructure***

This section outlines the data collection process and provides a brief summary of the asset type, age, condition, and valuation within each of the identified categories.

### **Each Infrastructure Asset Category includes the following:**

#### ***Inventory of Infrastructure Assets***

This section identifies the infrastructure assets within each category and summarizes the database of reports and documentation.

#### ***Integrated Projects***

This section identifies whether integration is a consideration for, specific assets, and identifies what an integrated project would entail.

#### ***Desired Levels of Service***

This section outlines the service expectations and deliveries for minimum levels of quality and maintenance for the specific assets

#### ***Asset Management Strategy***

This section identifies resources and professionals utilized, and actions and processes in place to effectively manage the specific asset.

#### ***Financing Strategy***

This section identifies the financial considerations associated with the specific asset and the revenue and expenditure forecasts for meeting the management strategy.

### ***The Asset Management Plan includes the following considerations:***

#### ***Integration***

Integrated projects will include both above ground rehabilitation of streets and sidewalks and underground replacements of water, sewer and storm sewers.

#### ***Priorities***

The Asset Management Plan identifies priority rehabilitation, replacement, and new initiatives based on public health and safety, risk management, growth and development.

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## MUNICIPALITY OF TWEED

### Priority categories are identified as follows:

- A-** High Priority
- B-** Medium Priority
- C-** Low Priority

### Urban Priorities have been identified as follows:

- A-** Water and Wastewater, Village integrated assets
- B-** Buildings
- C-** Fleet, Streetlights

### Rural Priorities have been identified as follows:

- A-** Bridges
- B-** Buildings, Roads, Waste Disposal, Gravel Pits,
- C-** Fleet, Streetlights

### Ratings

A rating system establishes individual infrastructure assets into categories by colour code based on such factors as age, condition, service level expectations and resource information. Ratings categories are identified as follows:

- RED** Poor Rating
- YELLOW** Fair Rating
- GREEN** Good Rating

## Introduction

The Municipality of Tweed is comprised of a main urban centre, a large rural component and five smaller hamlets within the rural area. The municipal infrastructure is an essential part of each of these areas. The urban centre is defined by its municipal services - water and sewer, streets, sidewalks and facilities. In the rural areas roads and bridges are key with more than 50 bridges and over 500 km of roads, many of which were at one time owned, managed and financed by the County of Hastings upper tier.

The Municipality's ability to maintain, upkeep, and improve its infrastructure assets is a major factor in determining growth and sustainability. Careful and responsible asset management is critical to the overall goal of providing municipal services efficiently and cost effectively.

The Municipality of Tweed created an Asset Management Plan to compile and examine data on its assets and to develop a strategy to manage the existing and future infrastructure needs. *An asset management committee was established, consisting of Council, senior and contract staff.* The committee initiated the process by identifying the major categories which comprise the municipality's infrastructure: Bridges, Buildings and Facilities, Fleet, Lands, Roads, Streets, Sidewalks, Storm Sewers, Streetlights, Waste Disposal, Water Treatment and Distribution, and Wastewater Treatment and Collection. All current and exiting resources relevant to the municipal infrastructure were compiled: records, reports, mapping, PSAB data. Gaps in the existing data were identified and a process put in place to retrieve and improve reserves necessary for a complete and comprehensive plan. The committee determined which areas would benefit from outside expertise. Contact was made with the appropriate engineers for followup information where needed. Agencies such as Ontario Good Roads Association and Ontario Clean Water Agency were utilized for information exchange. The County of Hastings was an invaluable resource for GIS mapping and data updates.

Using the Ministry of Infrastructure Building Together Guide, staff implemented a process to determine the state of municipal infrastructure, the desired levels of service, the management of the infrastructure assets and current and future financing. Each of the infrastructure categories were assessed, rated and prioritized using this criteria. Data was organized in a comfortable format for review by Council, staff and public. The plan includes a component for annual evaluation and both short-term and long-term implementation schedules.

### Annual Review

The Asset Management Plan will be reviewed on an annual basis by the committee. Department Heads will be the initial resource for review and updates of infrastructure assets, levels of service, strategies, and financing. Ratings and priorities will be reviewed using internal and external resources.

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# STATE OF LOCAL INFRASTRUCTURE

## DATA COLLECTION PROCESS

The Municipality's Asset Management Committee identified infrastructure asset categories to be included in the Plan and the steps to be undertaken to collect and update available data. An Asset Management Assistant was hired on a contract basis to bring together all of the data that would formulate the plan. The process involved reviewing the municipal general ledger, GIS mapping and current reports and compiling and re-evaluating PSAB data to give a broader sense as to where the Municipality stood in terms of its infrastructure.

Working with the Public Works Supervisor, formulas were established that laid the building blocks for establishing an infrastructure report card for the Municipality of Tweed. These reports identified gaps in four significant asset categories:

### **Roads Bridges Water Wastewater**

The overall state of our infrastructure is fair, with the majority of resources and deficit being attributed to our bridge inventory. The Municipality of Tweed has an inventory of over 50 bridges, and of those, half are rated in a poor condition according to professional engineering reports.

The following section breaks down each category that has been established for Asset Management, and takes into account the criteria used to examine the asset, and the on-average state of the asset category.

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## CRITERIA & STATE

### Water Treatment + Distribution

**Our Water Treatment + Distribution index consists of the following data:**

- Wells & Pumps Data- Aged less than 20 years and in good shape. Water Tower is in need of painting
- Fire Hydrant Data- Aged 38 years on average with a useful life of 50 years
- Water Meter Data- Replaced on an as need basis. Meters generally last 25 years
- Underground Water Mains Data- Aged 42 years on average. Major projects will be integrated with street projects
- Ontario Clean Water Agency Annual Reports- on file at Municipal Office and online at [tweed.ca](http://tweed.ca)

**Priority** - Our Water Treatment & Distribution system has been given a top "A" priority by the Municipality of Tweed

### Wastewater Treatment + Collection

**Our Wastewater Treatment & Collection index consists of the following data:**

- Pumping Stations Data- Aged 38 years with a major enhancement completed in 1992
- Underground Sewer Lines- Aged 42 years on average. Major projects will be integrated with street projects
- Ontario Clean Water Agency- annual Lagoon Reports on file at Municipal Office
- GPS Coordinates on lagoons, pumping stations, and manholes

**Priority** - Our Wastewater Treatment & Collection system has been given a top "A" priority by the Municipality of Tweed

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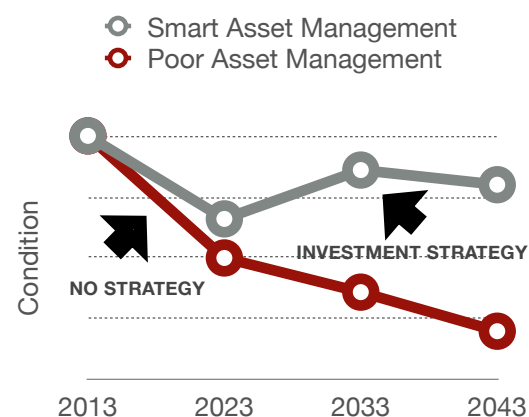
## Village Streets

**Our Village street index consists of the following data:**

Street name	Kilometers
Number of Properties	Type of Street
Condition of Street	Rehabilitation Timeframe

### Ratings-

Total length of Village Streets	=	14.7 km
Green Category	=	11.082 km
Yellow Category	=	1.136 km
Red Category	=	2.482 km



**Priority-** Our Village Streets system has been given a top “A” priority by the Municipality of Tweed.

## Sidewalks

**Our village sidewalk index consists of the following data:**

Street name	Kilometers	Rehabilitation Timeframe
Number of Properties	Condition	

### Ratings-

Total length of Sidewalks	=	12.5 km
Green Category	=	10.75 km
Yellow Category	=	1.69 km
Red Category	=	.06 km

**Priority** - Our Village Sidewalk system has been given a top “A” priority by the Municipality of Tweed (as an integrated asset).

## Storm Sewers

A GPS location of our storm sewers is included in the Hastings County GIS mapping system. Storm Sewers are an integrated asset and their condition will be dependant upon being replaced in an integrated village street project.

**Priority** - Our Storm Sewer system has been given a top “A” priority by the Municipality of Tweed (as an integrated asset).

## Buildings & Facilities

**Our building inventory index consists of the following data:**

- Description of building
- Function of building
- Current Value
- Year of Construction

The average age of Municipally owned buildings is 38 years.

**Priority** - Our Buildings & Facilities have been given a medium “B” priority by the Municipality of Tweed.

## Waste Disposal

**The Municipality contracts the services of Water & Earth Sciences for groundwater monitoring, operations and development plans.**

- Annual Reports on file
- Marlbank Road WDS (active) and Hunt Road WDS (inactive)
- Currently the active landfill site has an estimated life of more than 20 years
- The Municipality continues to implement measures, such as a clear garbage bag policy, to extend the timeline for the future.
- Municipality is a member of Centre & South Hastings Waste Services Board for recycling

**Priority** - Our Waste Disposal sites have been give a medium ‘B’ priority by the Municipality of Tweed.

## Streetlights

GPS coordinates were taken of the more than 300 streetlights, decorative lights, and traffic lights in the Municipality, and a GIS mapping of all the streetlights included on the Hastings County online mapping system. Streetlights are replaced on an as needed basis.

**Priority** - Our Streetlight system has been given a “C” priority by the Municipality of Tweed.

## Fleet

**Our fleet inventory index consists of the following data:**

- Description of asset
- Make/Model of Vehicle
- Year of Purchase
- Cost

The average age of the Municipal fleet is 8 years.

**Priority** - Our Fleet has been given a “C” priority by the Municipality of Tweed

## Bridges

**Our bridge inventory index consists of the following data:**

Bridge Name	Year of Construction	Road Location
OSIM Engineer Rating	GPS Coordinates	Households In Vicinity
Total Dollar Needs	Square Meters	

### Ratings-

Total Number of Bridges	=	52
Green Category	=	18
Yellow Category	=	18
Red Category	=	16

**Priority** - Our Bridge system has been given a top “A” priority by the Municipality of Tweed.

## Gravel Pits

Annual inspections are carried out on the Municipality's three gravel pits and compliance reports submitted to the MNR. Reports are on file at the Municipal Office.

**Priority** - Our Gravel pits have been give a "C" priority by the Municipality of Tweed.

## Roads- Rural Asphalt

**Our Rural Asphalt index consists of the following data:**

Road Name	Kilometers	Number of Properties
Type of Road	Condition of Road	Time for Repair

### Ratings-

Total length of Rural Asphalt Road:	=	32.3 km
Green Category	=	13.93 km
Yellow Category	=	0.66 km
Red Category	=	17.7 km

**Priority** - Our Rural Asphalt roads have been given a medium "B" priority by the Municipality of Tweed.

## Tar & Chip

**Our Tar & Chip index consists of the following data:**

Road name	Kilometers	Number of Properties
Type of Road	Condition of Road	Time for Repair

### Ratings-

Total length of Rural Tar & Chip Roads:	=	132km
Green Category	=	127 km
Yellow Category	=	4.98 km
Red Category	=	0.02 km

**Priority** - Our Tar & Chip roads have been given a medium "B" priority by the Municipality of Tweed.

## Gravel Roads

For our gravel roads the Municipality of Tweed uses a gravel application scheduling system developed by the Public Works Department and accepted into the asset management plan. The condition of the gravel roads will be consistent with the application schedule that is set out for the road in order to maintain its level of service to the public.

**Priority** - Our Gravel roads have been given a medium "B" priority by the Municipality of Tweed.



# WATER TREATMENT & DISTRIBUTION

**A**





# PUBLIC HEALTH



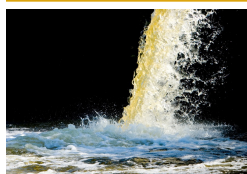
## **Water Treatment & Distribution**

<b>Asset</b>	Water Treatment and Distribution System
<b>Inventory Summary</b>	Pumping Stations, Water Hydrants, Water Tower, Water Meters, Wells, Water lines
<b>Integrated</b>	In order to best utilize public funds, and to ensure investment in infrastructure is continued in a fiscally responsible manner, the Municipality of Tweed strives to integrate major urban infrastructure initiatives. As a part of a commitment to integrated infrastructure, the Municipality of Tweed will plan to replace waterlines and underground assets during the re-construction of village streets to save future costs of road rehabilitation.
<b>Desired Level of Service</b>	The Municipality of Tweed contracts and works closely with Ontario Clean Water Agency to provide safe and adequate drinking water for the public. Meeting and or exceeding the Provincial regulations of water quality is identified as top priority in the asset management plan. All public inquiries will be responded too, and logged to ensure the best possible level of service for residents. "No boil water advisories" is a target the Municipality aims to uphold. Water supplies at rural community halls will adhere to the same level of service as village assets.
<b>Asset Management Strategy</b>	<ul style="list-style-type: none"> <li>• Contract Ontario Clean Water Agency to maintain drinking water system</li> <li>• Development of a Source Protection Plan which will eliminate risk to the drinking water source</li> <li>• General maintenance to ensure the level of service is being met</li> <li>• Adherence to emergency plans from OCWA</li> <li>• Hydrants &amp; water lines to be integrated with street enhancement projects</li> <li>• Continue to use metered water to improve or maintain conservation of water</li> </ul>
<b>Financing Strategy</b>	<ul style="list-style-type: none"> <li>• Water &amp; Sewer user rates will be in accordance with the Municipality's approved 10 year Water and Wastewater Financial Plan</li> <li>• Water and Sewer user fees will cover operating costs and some of the capital costs when projects are integrated with village streets</li> <li>• Significant projects such as drinking water system upgrades and enhancements to improve public health are reliant upon Provincial funding resources</li> <li>• Total estimated category value: \$8,308,744 in assets</li> <li>• Based upon a useful life of 50 years, our Water Lines Infrastructure deficit is \$3,670,400 or 44% of the entire asset category. The average age are 42 yrs old</li> </ul>

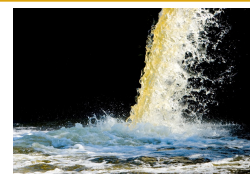


# WASTEWATER TREATMENT & COLLECTION

**A**



# CAPACITY



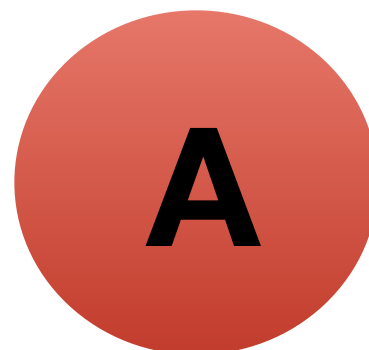
## **Wastewater Treatment & Collection**

<b>Asset</b>	Wastewater Treatment & Collection System
<b>Inventory Summary</b>	Lagoons (nearing full capacity) , Sewer lines, Pumping Stations,
<b>Integrated</b>	In order to best utilize public funds, and to ensure investment in infrastructure is continued in a fiscally responsible manner, the Municipality of Tweed strives to integrate major urban infrastructure initiatives. As a part of a commitment to integrated infrastructure, the Municipality of Tweed will plan to replace sewer lines and underground assets during the re-construction of village streets, to save future costs of road rehabilitation.
<b>Desired Level of Service</b>	The Municipality of Tweed strives to have a functioning system to meet both current and future customer needs. Abiding by MOE guidelines will ensure that provincial standards are being met or exceeded by the Municipality. Responding to and logging customer feedback will help to ensure records are up to date, and help establish metrics for measuring issues with the system. Increasing sewage lagoon capacity for the Village will be a target that the Municipality continues to measure.
<b>Asset Management Strategy</b>	<ul style="list-style-type: none"> <li>• Hired professional services to complete an EA study for recommendations and design of Wastewater system to accommodate future growth</li> <li>• Work to enhance the capacity of the Urban Centre</li> <li>• Integrate Sewer line replacement with street projects</li> <li>• Use of underground camera infiltration to identify and address infiltration in the system</li> <li>• Continue to compile flow statistics and log them for annual review</li> <li>• General maintenance as needed at two pumping stations to ensure levels of service are continued to be met</li> <li>• Joint repairs and lining to increase pipe life and reduce infiltration in the system. Also, explore new technologies that are available</li> <li>• Inspect manholes on a regular basis</li> </ul>
<b>Financing Strategy</b>	<ul style="list-style-type: none"> <li>• Water + Sewer user rates will be in accordance with the Municipality's approved 10 year Water and Wastewater Financial Plan</li> <li>• Water and Sewer user fees will cover operating costs and some of capital costs when projects are integrated with village streets. Significant projects such as capacity enhancement and public health are reliant upon Provincial funding resources</li> <li>• Total Asset Estimated Value: \$5,400,000 ( This does not include Lagoons)</li> <li>• Total Asset Estimated Deficit: \$3,670,400 (this does not include the need for an additional lagoon to accommodate Urban growth.)</li> </ul>





# VILLAGE STREETS







# INTEGRATION



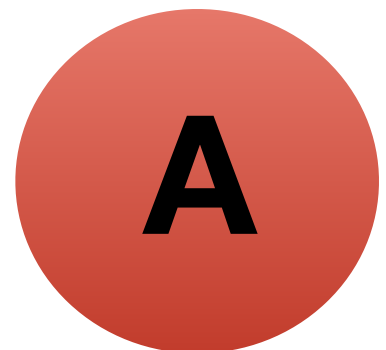
## Village Streets

<b>Asset</b>	14.7 km of Village Streets
<b>Inventory Summary</b>	14.7 km of Asphalt, Water & Sewer Lines, Hydrants, Streetlights, Sidewalks, Curb Gutters, Storm Sewers
<b>Integrated</b>	In order to best utilize public funds, and to ensure investment in infrastructure is made in a continued fiscally responsible manner, the Municipality of Tweed strives to integrate major urban infrastructure initiatives. As a part of a commitment to integrated infrastructure, the Municipality will, when possible, replace all relevant assets during a village street re-construction project.
<b>Desired Level of Service</b>	The number one priority for the Municipality of Tweed (in terms of this asset) is to ensure safe travel and public health and to meet and/or exceed the Minimum Maintenance Standards sets by the Province. The Municipality will log all public calls and concerns for followup action and annual review. All calls regarding pot holes, trip hazards, un-safe sight line, and general hazards will be investigated within a reasonable time frame, and recorded for annual review. A measurable target the Municipality has set for village streets is to maintain village streets that are within the green category in order to minimize future costs.
<b>Asset Management Strategy</b>	<ul style="list-style-type: none"> <li>• The principle strategy is to integrate all infrastructure investment including asphalt, water + sewer, storm sewer, curb gutters, sidewalks, and hydrants into one project for an economical solution for the Municipality</li> <li>• Working with the Village Street data(*) determine which streets are in need of investment based on the colour coded report card for village roads (Green, Yellow, Red) See Page 5.</li> <li>• Green Roads will have preventive maintenance done to maintain their LOS</li> <li>• Yellow &amp; Red Roads will need to be rehabilitated so as to meet the LOS</li> <li>• Continue to have sign study done by PWS each year on village streets</li> <li>• Explore new road top opportunities and technologies for enhancement</li> </ul>
<b>Financing Strategy</b>	<ul style="list-style-type: none"> <li>• Village street rehabilitation and integrated projects will be partially funded by allocation of municipal taxation and municipal reserve resources, including Gas Tax Fund. Provincial Funding will be required for major rehabilitation and integrated projects</li> <li>• In the next 3 years, 25 % of Village Streets (located within the RED category) will require reconstruction or rehabilitation to meet LOS, project(s) valued at just over \$2 million.</li> <li>• When factoring in integrated costs the cost is close to \$5 million in infrastructure investment needed (in just one of the three colour coded street categories)</li> </ul>

\*Village Street Data Located at: W://AssetManagement/ Working Category Files/ Roads



# VILLAGE SIDEWALKS





# SAFETY



<b>Village Sidewalks</b>	
<b>Asset</b>	12.5 km of Village Sidewalks
<b>Inventory Summary</b>	12.5 km of Sidewalk
<b>Integrated</b>	Village sidewalks are part of a greater municipal urban centre plan to integrate their repair, maintenance, and rehabilitation in order to make fiscally responsible infrastructure investments at the correct time, limiting the duplication of unnecessary costs in the future.
<b>Desired Level of Service</b>	The Municipality of Tweed is striving to ensure that safe sidewalks for pedestrian traffic and wheelchair access are a top priority in our Asset Management Plan. Aiming to achieve accessibility requirements has been, and will continue to be, a high priority when it comes to the quality of our sidewalks. Our target is to reduce the risk to Pedestrians and the Municipality.
<b>Asset Management Strategy</b>	<ul style="list-style-type: none"> <li>• As identified in our sidewalk data (*) We have 0.06 km of sidewalks in our RED category which require immediate repair immediately to meet our LOS</li> <li>• Sidewalks in the Yellow and Green category will have preventive maintenance measures (such as cold patching) where required to maintain our LOS</li> <li>• We will conduct annual inspections of our sidewalks and ensure MMS are being met</li> <li>• New sidewalks may be created in the village with new development, with a new street project or when public safety issues are brought forth</li> <li>• Preference for repair will be given to high traffic areas and school zones</li> </ul>
<b>Financing Strategy</b>	<ul style="list-style-type: none"> <li>• Sidewalk maintenance and independent rehabilitation projects will be funded through municipal taxation</li> <li>• Capital and Integrated projects will rely on shared financing from Provincial funding programs and municipal resources</li> <li>• Municipal sidewalks currently need \$170,000 in investment to meet our LOS</li> </ul>

\*Village Sidewalk Data Located at: W:///AssetManagement/ Working Category Files/ Sidewalks





# VILLAGE STORM SEWERS

**A**

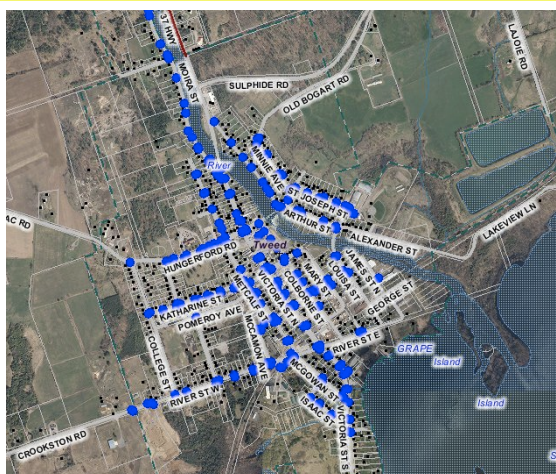




# WATER DIVERSION



Village Storm Sewers	
<b>Asset</b>	Distance Storm Sewer System
<b>Inventory Summary</b>	Grates and underground pipes
<b>Integrated</b>	Village Storm Sewers are part of a municipal urban centre plan to integrate their repair, maintenance, and rehabilitation to make make fiscally responsible infrastructure investments at the correct time, in order to limit the duplication of unnecessary costs in the future.
<b>Desired Level of Service</b>	Seasonal Maintenance and inspection to ensure storm water is flowing effectively as possible. Limit the number of backed up storm sewer drains in the Village.
<b>Asset Management Strategy</b>	<ul style="list-style-type: none"> <li>• Yearly Clean out of storm sewers</li> <li>• Integrate the replacement of Storm Sewers with Village Street projects to ensure fiscally responsible investment</li> <li>• New developments will require storm water management plans in consultation with the Municipality and applicable agencies</li> </ul>
<b>Financing Strategy</b>	<ul style="list-style-type: none"> <li>• Funds will be allocated from the operating budget</li> <li>• Integrated projects will rely on both Provincial and Municipal resources</li> </ul>





# BUILDINGS





# SAFE ENVIRONMENTS



Buildings	
<b>Asset</b>	Municipal Buildings
<b>Inventory Summary</b>	27 Buildings both public and staff oriented that fall under the responsibility of the Municipality
<b>Integrated</b>	Repairs will be made on Buildings when necessary to limit the amount of damage and to ensure that the buildings are not closed for an extended period of time, or on different occasions
<b>Desired Level of Service</b>	The Municipality of Tweed strives to create a safe environment for both staff and the public. The Municipality will continue to adapt public buildings accessibility needs and requirements. Complaints about buildings will be logged and reviewed annually to ensure a high level of service is being maintained. The Municipality has set a threshold of 50 years of useful life for buildings. Buildings over 50 years and which have not had major improvements will be targeted for professional assessment and potential rehabilitation.
<b>Asset Management Strategy</b>	<ul style="list-style-type: none"> <li>• Annual review of all major components of each building by a qualified professional where necessary and recommendations for repairs and replacement as needed</li> <li>• Additions will be made to enhance community development and operation needs where applicable and if financially viable</li> <li>• Comply with Provincial energy management plan</li> <li>• Buildings that are aged 50 years and over with less than \$30,000 in investment will be a top priority for the Municipality</li> </ul>
<b>Financing Strategy</b>	<ul style="list-style-type: none"> <li>• Currently our 27 buildings are valued at \$6.3 million</li> <li>• 22% of Municipal buildings need general enhancement to meet our current LOS</li> <li>• Continue to allocate funds in the general operating budget for minor repairs.</li> <li>• Allocate fund in annual budgets for future major repairs and/or projects</li> </ul>





# WASTE DISPOSAL SITE

**B**





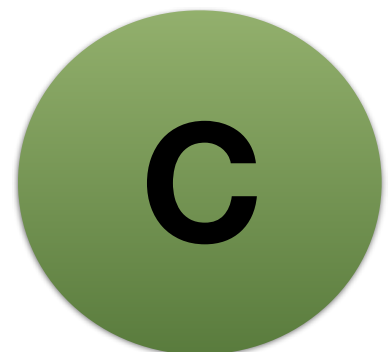
# DIVERSION



<b>Waste Disposal Site</b>	
<b>Asset</b>	Waste Disposal System
<b>Inventory Summary</b>	One active waste disposal site open to the public and one inactive waste disposal site (not open to the public)
<b>Integrated</b>	Consider all possibilities for integration methods that arise in the future.
<b>Desired Level of Service</b>	The Municipality of Tweed strives to extend the life of the Waste Disposal Site for as long as possible, which creates a cost effective solution for waste disposal. A measurable target is the continued extension of the useful life of the waste disposal sites. The active site will be open to the public for an appropriate number of hours each week; will continue to implement measures, including signage and notifications, to improve public use, including reasonable wait times and access to specific site areas.
<b>Asset Management Strategy</b>	<ul style="list-style-type: none"> <li>• Continue to explore new and existing ways to prolong the life of the waste site i.e. clear bags, bulk removal, recycling, tire stewardship, household hazardous waste programs</li> <li>• Implement weigh scales for bulk items</li> <li>• Organic solutions and programs will be explored for feasibility</li> <li>• Annual monitoring and reporting by WESA (contract service)</li> <li>• Meet MOE standard each year for groundwater monitoring</li> <li>• Review and consider all recommendations put forth from WESA and MOE for consideration</li> <li>• Exploring new options for waste disposal is not a desirable option for the Municipality and should be considered only if site life is to be exhausted</li> </ul>
<b>Financing Strategy</b>	<ul style="list-style-type: none"> <li>• Allocate funds in annual operating budget for ground water monitoring and reports and development of operations</li> <li>• Annual review of user fees and increases when required based on operating costs</li> <li>• The lifecycle of the waste disposal site is well over 20 years in its current state, financing is focused on 'preventative maintenance' and waste diversion and waste control measures to continue to extend the useful life as long as possible</li> </ul>



# STREETLIGHTS

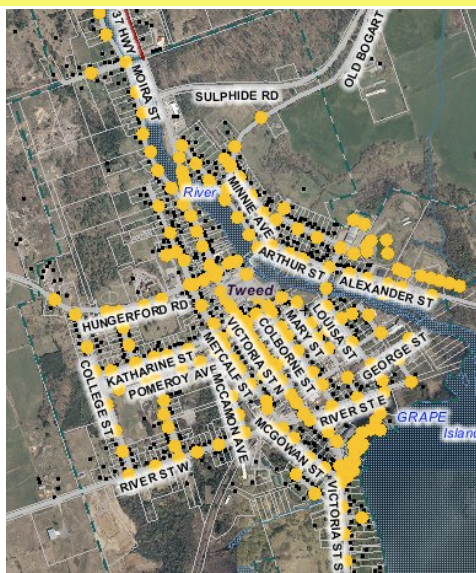




# EFFICIENCY



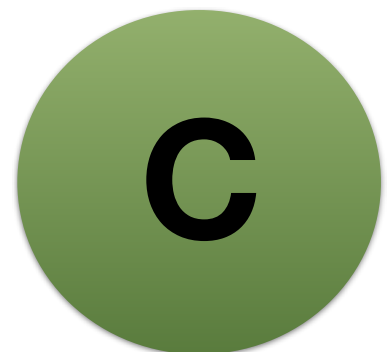
Streetlights	
<b>Asset</b>	Municipal Streetlight System
<b>Inventory Summary</b>	Over 300 streetlights and decorative lights. This includes ball park lights, park lights, and soccer field and pool lights. Traffic lights and indicators are also included in this inventory.
<b>Integrated</b>	The Municipality will integrate streetlight replacement into its street rehabilitation projects which will include integrated assets of hydrants, storm sewers, sidewalks, roads, water & sewer lines.
<b>Desired Level of Service</b>	The Municipality will strive to have functioning lights for public safety. New additions will be made to the lighting system to accommodate development and public safety concerns. The Municipality will log all customer requests and concerns for followup action and annual review. Non functioning lights will be repaired within one week of being reported (subject to contractor availability).
<b>Asset Management Strategy</b>	<ul style="list-style-type: none"> <li>• Continue to pursue energy efficient streetlights including LED</li> <li>• New Development and customer needs will determine the enhancement of streetlight system</li> <li>• Night watchman reports which lights are not functioning and in addition regular checks will be done on streetlights for illumination</li> </ul>
<b>Financing Strategy</b>	<ul style="list-style-type: none"> <li>• Allocate funds in annual operating budget for repairs</li> <li>• Streetlight costs are on a user fee basis, revenues cover operating costs</li> <li>• Municipal resources will be considered for total replacement of streetlight system (I.e. conversion to LED)</li> </ul>







FLEET







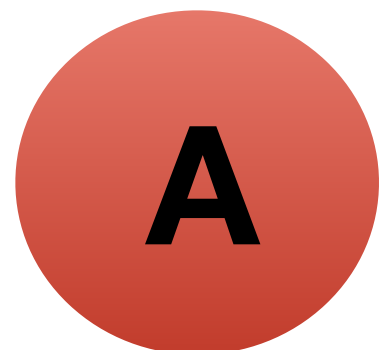
# QUALITY

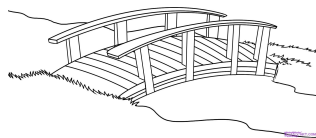


<b>Fleet</b>	
<b>Asset</b>	Public Works, Parks & Recreation, Fire Department Vehicles
<b>Inventory Summary</b>	19 vehicles, 4 trailers
<b>Integrated</b>	The Municipality of Tweed will explore shared purchasing opportunities with neighbouring municipalities, to reduce the overall cost of fleet additions. This process will allow for effective use of municipal funds in all asset management categories.
<b>Desired Level of Service</b>	The Municipality will provide for regular maintenance and upgrades, and new vehicles when required, to ensure safe and efficient vehicles for municipal staff operations. Provincial standards and regulations for Fire Department will be met
<b>Asset Management Strategy</b>	<ul style="list-style-type: none"> <li>• Vehicles costs for repairs shall not exceed the replacement costs of a new fleet addition.</li> <li>• New additions to the fleet will be deemed necessary on a recommendation from the Department Head to Council to meet the demand of the department</li> <li>• Based on the vehicle type and current market value for the asset the inventory item will be disposed of accordingly with a recommendation from the department head</li> <li>• The Municipality will maintain a maintenance record of each departments vehicle to ensure vehicles for budget comparisons</li> <li>• Maintenance and service record for each vehicle will be completed on a regular basis to ensure the best level of service</li> <li>• Ensure oil changes, engine service, replacement of tires, and all standards are upheld to keep vehicles running effectively</li> <li>• GPS units will be installed in fleet vehicles in order to enhance responses to liability claims against the Municipality</li> </ul>
<b>Financing Strategy</b>	<ul style="list-style-type: none"> <li>• Allocate funds in operating budget for vehicles repairs, maintenance and service</li> <li>• Annual allocation to reserves for future purchases of new fleet additions</li> <li>• Develop a purchasing policy to seek out the best cost for fleet additions and to keep the process of selecting new additions open and transparent</li> </ul>

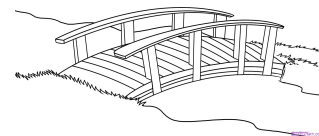


# BRIDGES





# PUBLIC SAFETY



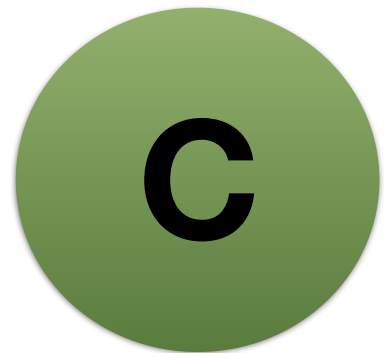
<b>Bridges</b>	
<b>Asset</b>	52 Bridges and Municipal Culverts
<b>Inventory Summary</b>	52 Bridges, OSIM Reports, Bridge Report Card
<b>Integrated</b>	Integrated with road projects where applicable and feasible.
<b>Desired Level of Service</b>	Taking into account the extreme cost associated with bridge maintenance, rehabilitation and replacement, the Municipality has set a LOS on bridges at maintaining established load limits as determined by professional engineer assessment. Regular patrols will be done to capture concerns from residents. A measurable target for the Municipality is to constantly monitor the state of repair of bridges as set out in the Bridge Report Card (*)
<b>Asset Management Strategy</b>	<ul style="list-style-type: none"> <li>• Continue to participate in regional initiatives for funding opportunities</li> <li>• Continue to do a bi-annual bridge OSIM inspection</li> <li>• Explore innovative technologies for bridge replacement</li> <li>• Aim to keep Green and Yellow bridges on the Bridge Report Card (*) in their current category by doing minor repairs and rehab as needed</li> <li>• RED category bridges are dependent on Provincial funding programs</li> <li>• Bridge closure options will be explored if necessary using traffic counts and community measures to minimize impact</li> <li>• Arterial bridges are considered a priority before all other bridges</li> <li>• Explore case study options for the 52 bridges in the Municipality</li> <li>• New bridges as additions to Municipal infrastructure will not be considered without private sector investment</li> <li>• Preventative maintenance such as replacing wooden decks, cleaning bridges, spot repairs for spalling will be completed to upkeep bridges</li> </ul>
<b>Financing Strategy</b>	<ul style="list-style-type: none"> <li>• Red category bridges are dependant upon Provincial funding to ensure public safety</li> <li>• The Municipality will allocate funds when possible, subject to annual budget constraints in an attempt to maintain Green and Yellow categories</li> <li>• Explore private sector funding opportunities</li> <li>• OSIM currently recommends \$12.2 million in Bridge investment</li> <li>• Using asset management metrics our Bridge Report Card indicates \$9.9 Million in investment is currently needed in our bridges to meet our LOS</li> <li>• Addition of bridges to the Municipal infrastructure is dependent upon support from private sector investment</li> <li>• Preventative maintenance costs are a minimum \$30,000 for this asset category</li> </ul>

\* Bridge Data Report Card Located at: [W://AssetManagement/ Working Category Files/Bridges](W://AssetManagement/Working Category Files/Bridges)





# GRAVEL PITS







# MANAGING LIFECYCLE



<b>Gravel Pits</b>	
<b>Asset</b>	Three Municipally owned & operated Gravel Pits
<b>Inventory Summary</b>	Broek Pit, Deshane Pit, James Pit
<b>Integrated</b>	The management of the Municipal gravel pits is inter-twined with the Municipal road gravelling schedule. Depending on roads needs according to the gravelling schedule, the appropriate amount of materials will be removed from the pits to accommodate the road needs.
<b>Desired Level of Service</b>	The Municipality of Tweed will use the three gravel pits to their full potential. Maximizing the use of materials to upgrade and to maintain our municipal road structure is a key mechanism for the Municipality. Access to and effective use of the pits are key to keeping costs low in maintaing municipal roads.
<b>Asset Management Strategy</b>	<ul style="list-style-type: none"> <li>• Explore measures to extend the useful life of the gravel pits</li> <li>• Carry out regular inspections and submit annual reports to the Province.</li> <li>• Work closely with Ministry of Natural Resources to execute their recommendations for extending the lifecycle of the gravel pit</li> <li>• Closure of pits will be determined by Ministry of Natural Resources on recommendation to Council</li> <li>• All safety measures as recommended will be put in place to ensure a safe working environment</li> </ul>
<b>Financing Strategy</b>	<ul style="list-style-type: none"> <li>• The Municipality will continue to fund the operations and development of the three municipal gravel pits</li> <li>• Allocate funds for the rehabilitation of gravel pits as needed</li> <li>• The dollar figure allocated each year will be dependent upon a review of the road gravelling schedule as per the Gravel Roads Asset Management Strategy. See Page 35.</li> </ul>



RURAL ASPHALT





## PREVENTATIVE MAINTENANCE



Rural Asphalt	
<b>Asset</b>	Rural Asphalt Road System
<b>Inventory Summary</b>	28 km of Rural Asphalt Road.
<b>Integrated</b>	Some sections of Rural Asphalt Road are located within the zoned hamlet areas of the Municipality. Asphalt road to be repaired within a hamlet will be integrated with other infrastructure including sidewalks.
<b>Desired Level of Service</b>	The number one priority for the Municipality of Tweed (in terms of this asset) is to ensure safe travel and public health and to meet or exceed the Minimum Maintenance Standards sets by the Province. The Municipality will log public calls and concerns for followup action and review. All calls regarding pot holes, trip hazards, un-safe sight line, and general hazards will be investigated within a reasonable time, and recorded for annual review. A measurable target is to maintain at least 10 km of the total 13.93 km currently in the GREEN category to ensure at least 70 % of the GREEN asphalt roads are maintained..
<b>Asset Management Strategy</b>	<ul style="list-style-type: none"> <li>• Roads over 5 km in length have been segmented into sections based on quality, entrances, connecting roads, and geography to effectively spread costs over multiple fiscal years</li> <li>• A road report card has been established to rate each road similar to the strategy used with Municipal Bridges. See Page 27.</li> <li>• The Municipality will upgrade rural asphalt roads in the RED category and attempt to maintain the roads in YELLOW and GREEN at their current state</li> <li>• Continue to have a sign study completed each year on all roads</li> <li>• Explore opportunities for new road top technologies</li> <li>• Re-vamp preventative maintenance measures to ensure roads remain at current quality as per the Rural Asphalt Report Card</li> <li>• Procurement investigation for shared projects and resources</li> <li>• Continue to improve the quality of Municipal segmented road structures</li> <li>• Preventative maintenance such as shouldering, ditching, culverts, and crack sealing will be used to extend the lifecycle of the asset</li> </ul>
<b>Financing Strategy</b>	<ul style="list-style-type: none"> <li>• 65% of all Municipal Rural Asphalt as currently identified by our asset management strategy needs to be enhanced</li> <li>• The estimated cost of the upgrades is \$ 6.6 million with one arterial project being the most costly (Crookston Rd) with an estimated cost of \$ 4.9 million</li> <li>• Rural asphalt roads upgrades will be funded through allocation of municipal taxation and municipal reserves (including Gas Tax Fund) where possible. Provincial funding will be required for major rehabilitation projects</li> <li>• Preventative maintenance costs are a minimum \$25,000 per year</li> </ul>





TAR & CHIP

**B**



# ALTERNATIVE SURFACING



Tar & Chip	
<b>Asset</b>	Tar & Chip Road System
<b>Inventory Summary</b>	132 km of Tar & Chip Road
<b>Integrated</b>	Tar & Chip roads are not part of an integrated project
<b>Desired Level of Service</b>	The number one priority for the Municipality of Tweed (in terms of this asset) is to ensure safe travel and to meet or exceed the Minimum Maintenance Standards sets by the Province. The Municipality will log public calls and concerns for followup action and review. All calls regarding pot holes, sight line, and general hazards will be investigated within a reasonable time frame, and recorded for annual review. A measurable target is to maintain at least 100 km of the total 132 km currently in the GREEN category to ensure at least 75 % of the GREEN Tar & Chip roads are maintained.
<b>Asset Management Strategy</b>	<ul style="list-style-type: none"> <li>• Using the Tar &amp; Chip Road Report Card to divide roads will help identify which capital projects</li> <li>• Roads with a RED rating, the Municipality has designated to be upgraded and roads at YELLOW or GREEN will have preventative maintenance to maintain their state of repair</li> <li>• Road studies and traffic counts will determine which roads may be considered for upgrade from gravel to Tar &amp; Chip for financial savings. Roads studies and traffic counts will help determine whether they need to be upgraded. Arterial connections will be taken into account when deciding upgrades</li> <li>• Like Rural Asphalt, Tar &amp; Chip roads over 5 km will be segmented both for logistical asset management planning, and to spread costs over multiple fiscal years</li> <li>• Sign study will continue to be completed each year on all roads</li> <li>• Continue to explore new road top opportunities</li> <li>• Regular preventative maintenance measures include: shouldering, ditching, mowing, surfacing, patching, and culvert replacement</li> </ul>
<b>Financing Strategy</b>	<ul style="list-style-type: none"> <li>• Under our current asset management framework, there is only one Tar &amp; Chip road that needs upgrading beyond preventive maintenance to maintain its level of service</li> <li>• The Municipality of Tweed will continue to use its own resources to maintain and Rehabilitate Tar &amp; Chip roads</li> <li>• We currently have an estimated \$6.6 million worth of Tar &amp; Chip Roads</li> <li>• In the next 5 years the Municipality will have to look at rehabilitation on 5 km of Tar &amp; Chip road at an estimated cost of \$250,000</li> <li>• Preventative maintenance costs are a minimum \$25,000 for this asset category</li> </ul>





GRAVEL



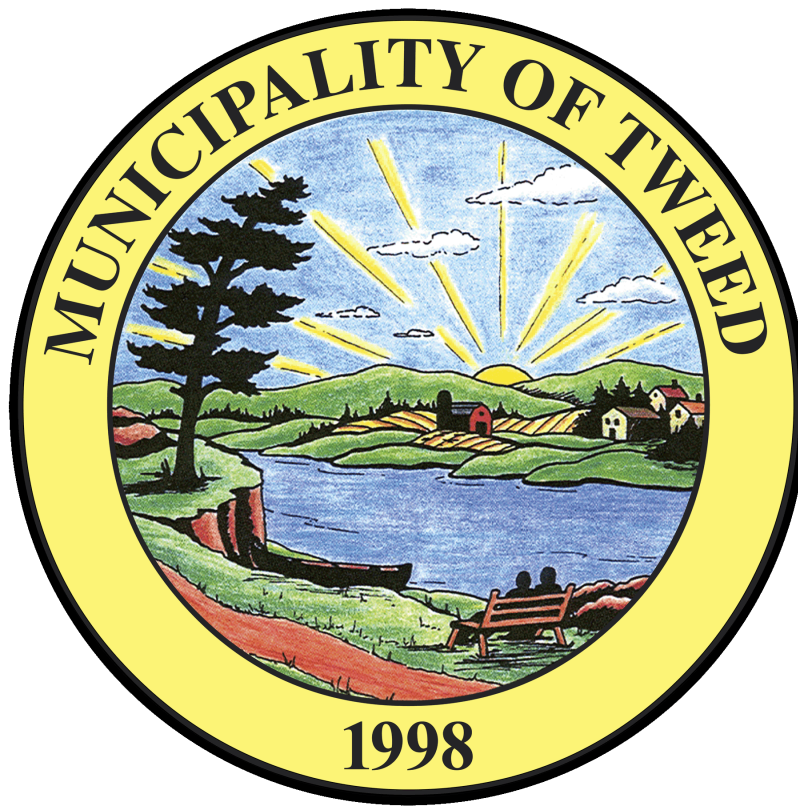




## INVESTMENT SCHEDULING



Gravel Roads	
<b>Asset</b>	Municipal Gravel Roads
<b>Inventory Summary</b>	266 km of Gravel Roads
<b>Integrated</b>	Gravel roads are not part of major integrated projects. The Municipality has a comprehensive gravel application system in place, carried out in accordance with an annual schedule and to coincide with roadside brushing and ditching.
<b>Desired Level of Service</b>	The number one priority for the Municipality of Tweed (in terms of this asset) is to ensure safe travel and to meet or exceed the Minimum Maintenance Standards sets by the Province. The Municipality will log public calls and concerns for followup action and review. All calls regarding pot holes, un-safe sight line, brushing, ditching and general hazards will be investigated within a reasonable time frame, and recorded for annual review. A measurable target for our gravel road system is to maintain the gravel application program schedule to ensure appropriate coverage of all gravel roads.
<b>Asset Management Strategy</b>	<ul style="list-style-type: none"> <li>• The Municipality has established a gravel application program which includes a detailed road-by-road schedule over a multi-year period</li> <li>• Brushing and Ditching schedule will continue for general maintenance to gravel roads.</li> <li>• Road studies are traffic counts will determine which roads may be upgraded from gravel to Tar &amp; Chip for financial savings. Priority will be given to arterial connections</li> <li>• Sign study completed each year on all roads</li> <li>• Continue to explore alternative methods for upgrading road system</li> <li>• Preventative maintenance measures include: shouldering, grading, gravelling, dust application, ditching, culvert installations, and roadside mowing</li> </ul>
<b>Financing Strategy</b>	<ul style="list-style-type: none"> <li>• Municipal resources will be utilized to maintain our gravel roads system</li> <li>• Re-gravelling every road at the same time would cost an estimated \$10 million to complete. The gravel application schedule which is in place allows department costs to be spread over several years so that the investment can be made while limiting financial impact</li> <li>• An estimated \$ 2.2 Million over the next 5 years for Gravel roads to meet our desired level of service. This equates to about 60 km or 23% of all our gravel roads in the next 5 years.</li> <li>• Annual budget allocation of up to \$200,000 will help achieve the gravel re-surfacing schedule goals.</li> </ul>



# APPENDIX

1. State of Local Infrastructure Research Data: Municipality of Tweed Server: <W://Lucaswales/Working Category Files>
    - Ratings, locations, age, conditions, property servicing, km of roads, bridge measurements, inventory,
  2. Building Together Guidelines For Asset Management Plans In Ontario
  3. Hastings County GIS Mapping Tweed Infrastructure
  4. Bridge & Road Report Card: Municipality of Tweed Server: <W://Lucaswales/Working Category Files>
  5. PSAB Data located at <W://Betty/PSAB>
  6. Road Rating Report Cards: <W://Lucas/Working Category Files/ Roads>
  7. Municipality of Tweed Graveling, Ditching, Brushing Schedule
  8. Municipality of Tweed Annual Budget
  9. Ontario Clean Water Agency Annual Monitoring Reports
  10. Ontario Clean Water Agency Daily Flow Statistic Reports
  11. WESA Annual Monitoring Reports
  12. OSIM Engineer Bridge Report
  13. Ministry of Environment Annual Inspections & Reports
  14. Ministry of Natural Resources Annual Inspections & Reports
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- 15. Hastings County GIS Bridge Mapping
- 16. Asset Photos
- 17. Hastings County GIS Storm Sewer Mapping
- 18. Hastings County GIS Streetlight Mapping