MUNICIPALITY OF
ARRAN-ELDERSLIE

Staff Report

Council Meeting Date: September 22, 2025

Subject: PWRDS-2025-23 Stormwater Needs Study - Chesley, Paisley, Tara

Report from: Julie Fenton, Infrastructure & Development Coordinator

Attachments: None.

Recommendation

Be It Resolved that Council hereby receives for information Report PWRDS-2025-23 Stormwater Needs Study - Chesley, Paisley, Tara.

Background

The Municipality hired GSS Engineering to conduct a Stormwater Needs Study for Chesley, Paisley, and Tara. The study evaluates current stormwater systems, identifies capacity deficiencies, and recommends targeted upgrades to reduce flooding during 1:5-year storm events, while acknowledging that eliminating all overloading may not be feasible or affordable. The report assesses infrastructure, prioritizes improvements, estimates costs, and aims to help Arran-Elderslie make informed decisions for effective and sustainable stormwater management.

The three studies are intended to provide a picture of the current state of storm water infrastructure within the three towns of Tara, Paisley and Chesley.

Tara Stormwater Needs Study

Paisley Stormwater Needs Study

Chesley Stormwater Needs Study

Analysis

GSS Engineering conducted the stormwater study using existing municipal maps and records, supplemented by field surveys to verify storm sewer inverts and gather missing data. In areas where field verification was not feasible, reasonable assumptions were made regarding sewer slope, size, and length. Due to budget constraints, no CCTV inspections of the underground infrastructure were carried out. As a result, the study's findings are based on infrastructure age, sizing, design standards, weather forecasting, and computer modelling. It is important to recognize that undetected damage or collapsed infrastructure may exist within the system, potentially increasing the flood risks identified in the study.

Storm Water Systems

In general, catch basins collect stormwater runoff and carry it through storm sewers to a dedicated outlet. Such runoff transportation network is termed as the "minor stormwater system". The minor stormwater system is generally intended to carry runoff from a 1:2-year or 1:5-year storm event.

For larger storms, the excess stormwater runoff that cannot be conveyed by the minor system is carried overland, usually in road corridors and ditches, to a dedicated outlet. This is referred to as the "major stormwater system".

1:2-year storm – Here's what it means:

- It does not mean it happens every two years
- It refers to a rainfall event that has a 50% chance of occurring in any given year.
- It's a frequent, low-intensity storm used to design systems that handle everyday rainfall.
- Engineers use this return period to size minor stormwater systems like catch basins and small sewers.

1:5-year storm - Here's what it means:

- It does not mean the storm happens exactly every 5 years.
- Instead, it means there's a 1 in 5 chance (or 20%) that such a storm will occur in any given year.
- These estimates are based on historical rainfall data and are used to design infrastructure like storm sewers, culverts, and drainage systems to handle expected water volumes.

1:100-year storm – Here's what it means:

- Does not mean the storm happens only once every 100 years.
- It means there's a 1 in 100 chance (or 1%) of such a storm occurring in any given year.
- These events are used to design and evaluate critical infrastructure like flood control systems, stormwater networks, and emergency response plans.
- Because of their intensity, 1:100-year storms often exceed the design capacity of standard municipal stormwater systems, which are typically built to handle more frequent events like 1:5-year storms.

Storm sewer surcharging occurs when the stormwater system becomes overwhelmed and the water level inside the sewer pipes rises above the normal flow level, often reaching or exceeding the top of the pipe. This typically happens during heavy rainfall events when the volume of water entering the system exceeds its design capacity.

Key Characteristics of Surcharging:

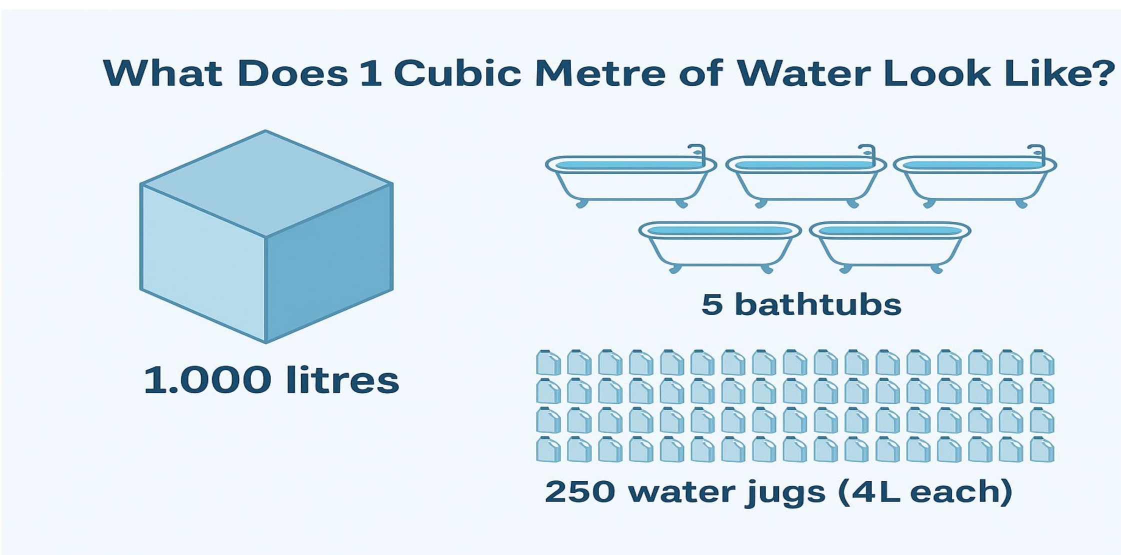
- Water backs up in the pipes and may rise into connected catch basins or manholes.
- It does not necessarily cause surface flooding, but it indicates the system is under stress.
- If surcharging is severe or prolonged, it can lead to localized flooding, especially in low-lying areas.
- It's a sign that the system may need upgrades to improve capacity or flow efficiency.

Storm sewer flooding occurs when the stormwater system becomes overwhelmed and water escapes from the sewer network onto the surface. This typically happens during intense rainfall events when:

- The volume of water exceeds the system's capacity.
- Pipes and catch basins are blocked or undersized.
- Water cannot drain quickly enough, causing it to back up and overflow.

Effects of Storm Sewer Flooding:

- Water may pool on roads, sidewalks, and private properties.
- It can lead to property damage, traffic disruptions, and safety hazards.
- In severe cases, it may contribute to basement flooding or erosion.
- This is different from surcharging, where water rises within the system but hasn't yet escaped to the surface. Flooding is the next stage—when the system fails to contain the water entirely.



Stormwater Needs Study Results

Tara

Tara has a population of approximately 1,119 and 476 dwellings (as per 2021 census) and is spread over approximately 2.4 km² of land. The Sauble River winds through Tara, entering from the south and travelling to the north end of the community where it turns and exits to the southwest. Most of Tara slopes towards the Sauble River.

Most roads in Tara lack curb and gutter systems, roadside ditches, or proper outlets for major stormwater events. Some areas have curbs with curb-faced sidewalks, but these are shallow and considered inadequate. A specific concern is Elgin Avenue (between Brooke Street and Matilda Street), which has a dip in the middle of the block and no outlet for major rainfall events.

Also important to note that parts of the stormwater system—including municipal storm structures, sewers, and outlets—are located on private property, without easements in place. Such infrastructure is typically expected to be within municipally owned land.

🌧️ Tara Minor Stormwater System

- Collects runoff from 1:2-year or 1:5-year storm events.
- Composed of ~5 km of storm sewers (100 mm to 675 mm diameter).
- 208 storm structures (catch basins, manholes, oil grit separator).
- Most common pipe size: 200 mm ø.
- 61% of sewers are 300 mm ø or less.
- MECP guidelines require a minimum pipe size of 200 mm ø

🌊 Tara Major Stormwater System

- Activated during larger storm events.
- Uses road corridors and ditches for overland flow.

🌄 Tara Stormwater Management Ponds

- Two ponds serve Tower Hill Crescent Subdivision:
  - SWM Pond 1: Serves northwest portion.
  - SWM Pond 2: Serves eastern townhouse rows.

- Designed to:
  - Collect runoff.
  - Reduce peak flow.
  - Discharge via controlled orifice.
  - Performance data from COBIDE Engineering (2018).

🏠 Tara Stormwater Assets on Private Property

- Some municipal stormwater infrastructure is located on private land.
- Lack of easements complicates access and maintenance.

🔧 Key Deficiencies – Tara Stormwater System

Minor System Deficiencies

- Reverse slope sewers prevent gravity flow, causing backups.
- Structures with no outlet lead to upstream flooding.
- Small diameter pipes (many ≤ 300 mm) limit capacity.
- Storm assets on private property lack easements, complicating maintenance.

Major System Deficiencies

- Many roads lack curb & gutter or roadside ditches, reducing overland flow capacity.
- Shallow curbs (e.g., curb-faced sidewalks) are ineffective during major storms.
- No outlet in low-lying areas, such as the dip on Elgin Avenue, increases flood risk.
- Filled-in ditches by residents reduce stormwater conveyance.

Stormwater Management Pond Limitations

- Only two ponds serve a single subdivision (Tower Hill Crescent).
- Limited coverage for broader urban area.
- Performance dependent on controlled orifice and pond maintenance.

Existing Stormwater Conditions Modelling Results

This section highlights the storm surcharging and flooding based on the existing conditions of the Stormwater System.

1:5-Year Storm Results

- 22 of 208 storm structures will flood; 79 will surcharge.
- Estimated flood volume: 3,654 m^3.
- Three structures—DICBMH 318 (John St.), CBMH 248 (Yonge St.), and CB 215 (Union St.)—account for 70% of total flooding.
- High surcharging observed on Brook St. E., Yonge St., Francis St., Elgin Ave., and John St.

1:100-Year Storm Results

- 52 structures will flood; 118 will surcharge.
- Estimated flood volume: 16,544 m^3.
- The same three structures account for 54% of total flooding (8,863 m^3).
- Minor stormwater systems are only designed for 1:5-year events, so flooding is expected in larger storms.

Key Concerns:

- Many streets (e.g., Francis St., Elgin Ave., Maria St., Matilda St., Market St., River St., Whites Ave., Main St., John St.) lack curb and gutter or sufficient ditches, making overland flow and drainage difficult.
- Elgin Avenue has a dip between Brooke and Matilda Streets with no outlet, leading to water accumulation.
- Proper curb, gutter, ditching, and vertical road realignment are needed during reconstruction.
- A survey of ground floor and basement elevations is recommended to assess residential flood risk.

Proposed System Upgrades

Based on the study results for existing stormwater conditions, twelve system upgrades have been identified to mitigate flooding during a 1-in-5-year storm event. These upgrades vary in scope, from minor sewer replacements to full system reconstructions, and are prioritized strictly by the volume of flooding they eliminate. Five of the proposed upgrades are located on County Roads but are included due to their importance in achieving overall system improvement. These deficiencies will be communicated to Bruce County.

Upgraded Stormwater System Modelling Results

This section highlights how the proposed upgrades reduced the surcharging and flooding risks associated with the Tara Stormwater system.

1-in-5-Year Storm Results

- Flooded Structures: Reduced from 22 to 1 (CB 215 on Union Street).
- Surcharged Structures: Reduced from 79 to 36.
- Keynote: The remaining flooded structure, CB 215, is under Bruce County's jurisdiction and was not addressed in this study. All Municipal storm structures in Tara are no longer flooded during a 1-in-5-year storm with the proposed upgrades.

1-in-100-Year Storm Results

- Flooded Structures: Reduced from 52 to 26.
- Surcharged Structures: Reduced from 118 to 89.
- Flooding Volume: Reduced from 16,544 m^3 to 5,111 m^3.
- Keynote: 76% of the remaining flooding volume occurs at CB 215. While the system is not designed to fully convey 1-in-100-year storms, the upgrades significantly improve stormwater conveyance and reduce overall flooding impacts.

Storm System Costs

The total estimated replacement cost for Tara's current stormwater infrastructure is $5,626,707.50 (2024). These costs include costs associated with re-establishing ditches in areas where the ditches have been filled in by residents but excludes costs for other concurrent upgrades to municipal infrastructure.

The seven (7) priority upgrades proposed to the municipal owned-system to mitigate the flooding risks during a 1:5-year storm is $1,854,956.25 and are highlighted in the chart below.

Tara Stormwater System – Recommended Upgrades by Priority Ranking

*Priority ranking based solely on reduction in flooding during 1:5-year storm. Projects on Bruce County roads are excluded from this spreadsheet.

Priority Ranking	Upgrade Description	Location	Budget Project Cost (includes Storm Sewers, Structures, Curb & Gutter Removal and Replacement)
1	Reconstruction of John St. (from Hamilton St. to Heather Lynn Blvd.) and Heather Lynn Blvd. (from John St. to Mill St.)	John St. and Heather Lynn Blvd.	$578,650.00
2	Reconstruction of Elgin St. and Matilda St. (from Elgin St. to Francis St.)	Elgin St. and Matilda St	$339,780.00
3	Install outlet sewer from CB 357 to the Sauble River	River St north of Market St	$94,500.00
	Replace sewer from Junction to STM 1001 and from STM 1001 to Outlet	Main St from Yonge ST to Ann ST and Ann ST from Main ST to River ST	$144,985.00
5	Reconstruction of Francis ST (from Brook ST W to Matilda ST)	Francis Street	$182,050.00 Project completed in 2024 – Actual Costs of Stormwater Portion - $522,000
6	Replace sewer from CB 237 to CB 236	Intersection of Yonge St. South & Main St.	$14,875.00
7	Replace sewer from CB 345 to CB 343.	River St. west of Main St.	$129,125.00
		Total Construction Cost	1,483,965.00
	Engineering & Contingencies @ 25%		370,991.25
		Total Project Cost (Excl. HST)	1,854,956.25

Recommendations of the Study

The following recommendations are presented:

1) The seven (7) storm system upgrades identified in this report should be prioritized to eliminate flooding during the 1:5-year storm. However, they should be combined with future road reconstructions, watermain and sanitary sewer projects. Proper curb and gutter or roadside ditches are recommended to be added to ensure flooding during severe storms is conveyed to a sufficient outlet.

2) Bruce County be notified of the deficiencies on the Union Street stormwater system as an in-depth study should be conducted for this area to determine upgrades to eliminate flooding during the 1:5-year storm.

3) Arran-Elderslie is advised to consider an annual fund amount of $100,000 towards storm sewer system upgrades, in order that deficiencies are eliminated by way of sustained effort to bring about improvements.

Paisley

Paisley has a population of approximately 1,061 and includes 526 dwellings (as per 2021 census). Paisley is spread over approximately 1.8 km2 of land. The Saugeen River winds through Paisley, entering from the south and travelling to the north end of the community where it turns and continues to the northwest. Paisley has two rivers that flow through town. The majority of Paisley slopes toward the Saugeen River however southwest part of Paisley slopes towards Teeswater River.

Paisley Minor Stormwater System

- Designed for 1:2-year or 1:5-year storm events.
- Includes catch basins, storm sewers, and structures
- 380 Storm Structures
- Total sewer length: ~11.8 km.
- Sewer sizes range from 100 mm to 900 mm, with 67.4% ≤ 300 mm.
- MECP guidelines require ≥ 200 mm diameter.

Paisley Major Stormwater System

- Activated during larger storm events.
- Uses overland flow via road corridors and ditches.
- Many roads lack curb & gutter or proper roadside ditches, limiting major system effectiveness.

Paisley Natural Ditch System

- Located in the Environmental Protection Zone.
- Originates near Willow Creek, runs along George Street, and outlets north of North Street.
- Low flows go through an underlying storm sewer; excess flows are conveyed by the surface ditch.
- This system is a part of the larger dyke system.

🔧 Key Deficiencies with Paisley's Stormwater System

- Reverse Slope Sewers
  - Water cannot flow by gravity.
  - Causes backup until enough head pressure builds.
- Structure with No Outlet
  - No downstream connection.
  - Leads to flooding during rainfall events.
- Storm Assets on Private Property
  - Located without easements.
  - Limits municipal access for maintenance or upgrades.
- Roads Without Curb & Gutter
  - Reduces capacity for overland flow during major storms.
  - Increases flood risk.
- Filled-In Ditches
  - Obstructs major stormwater conveyance.
  - Can cause localized flooding.

Existing Stormwater Conditions Modelling Results

This section highlights the storm surcharging and flooding based on the existing conditions of the Stormwater System.

1:5-Year Storm Event

- 64 structures flood.
- 177 structures surcharge.
- Total flood volume: 12,230 m^3.
- Major flooding structures:
  - DICB 329 (Inkerman/George): 5,989 m^3
  - CB 296 (Inkerman/Albert): 791 m^3
  - CB 297 (Inkerman/Albert): 808 m^3
  - CB 215 (Queen/North): 869 m^3
  - These 4 structures = 69% of total flooding.
- Surcharging areas: Queen St., Victoria St., James St., Ross St., Balaklava St.

1:100-Year Storm Event

- 173 structures flood.
- 231 structures surcharge.
- Total flood volume: 32,943 m^3.
- Same 4 structures = 14,737 m^3 or 45% of total flooding.
- High-risk streets (no curb/gutter or ditches): Ross, Victoria, Inkerman, James, Albert, Balaklava, Cambridge, Arnaud, North, Maggie, Orchard.

Natural Channel/Ditch (Environmental Protection Zone)

- 1:5-year storm: conveys 6,680 m^3.
- 1:100-year storm: conveys 13,347 m^3.
- Combined with storm sewer, appears adequate for 1:100-year event.

- Final adequacy requires detailed topographic survey.

Additional Recommendations

- Need for curb & gutter or roadside ditches during road reconstruction.
- Survey of finished floor elevations needed to assess residential flood risk.

Upgraded Stormwater System Modelling Results

This section highlights how the proposed upgrades reduce the surcharging and flooding risks associated with the Stormwater system.

1:5-Year Rainfall Event

- Flooding eliminated in all storm structures except 8 located within the natural channel/ditch.
- Surcharged structures reduced from 177 to 81.
- System performance significantly improved for minor storm events.

1:100-Year Rainfall Event

- Flooded structures reduced from 173 to 105.
- Surcharged structures increased from 231 to 268 due to:
    - More runoff stored in large diameter sewers.
    - Less flooding = more surcharging.
- Total flood volume reduced from 32,943 m^3 to 9,371 m^3.
- Although not designed for 1:100-year events, upgrades greatly improve performance.

Storm Water Costs

The total estimated replacement costs of the existing storm infrastructure in Paisley are $3,581,282.50 (2024 costs). These costs include costs associated with re-establishing ditches in areas where the ditches have been filled in by residents but excludes costs for other concurrent upgrades to municipal infrastructure.

The ten (10) priority upgrades proposed to the municipal-owned system to mitigate the flooding risks during a 1:5-year storm are $1,889,989.69 and are highlighted in the chart below.

Paisley Stormwater System – Recommended Upgrades by Priority Ranking

*Priority ranking based solely on reduction in flooding during 1:5-year storm. Projects on Bruce County roads are excluded from this spreadsheet.

Priority Ranking	Upgrade Description	Location	Budget Project Cost (Includes Storm Sewers, Structures, Curb & Gutter Removal and Replacement)
1	Reconstruction of James St. (from Inkerman to Alma St.) and installation of storm sewer on Inkerman St. (DICB-328 to DICB-330)	James Street and Inkerman St.	$292,256.50
2	Storm sewer replacement at Albert /Inkerman intersection.	Albert, Inkerman	$35,000.00
3	Storm sewer replacement (CB-237 to DICB-507 and to outlet to river)	Victoria North	$148,940.75
4	Reconstruction of Ross St. and Church St. (between Cambridge St. and Church St.)	Ross, Church	$239,504.50
5	Reconstruction of Victoria St. south (CB-494 to outlet to river)	Victoria South	$554,200.00
6	Storm sewer replacement (CB-395 to CB-417), (DI-375 to CB-374)	Victoria S/Balaklava	$80,840.00
7	Storm Sewer replacement (CB-917 to CB-304)	Balaklava/Albert	$93,500.00
8	Storm Sewer replacement (CB-314 to joint near CB-313)	George/Arnaud	$15,625.00
9	Storm Sewer replacement (CB-934 to joint near CB-282)	Angie Street	$5,000.00
10	Storm Sewer replacement (CB-521 to joint near CB-520)	River St. (unnamed) east of George St. N	$47,125.00
Total Construction Cost			**$1,511,991.75**
Engineering & Contingencies @ 25%			**$377,997.94**
Total Project Cost (Excluding HST)			**$1,889,989.69**

Recommendations from the study

The following recommendations are presented:

1. The ten (10) system upgrades identified in this report are recommended to be prioritized to eliminate flooding during the 1:5-year storm. However, they should be combined with future road reconstructions, watermain and sanitary sewer projects. Proper curb & gutter or roadside ditches are recommended to be added to the project(s) ensure flooding during severe storms, is conveyed to a sufficient outlet.
2. Environmental Authorities should be notified to upgrade/maintain the natural channel in protected zone as per the analysis. The natural channel originates near Willow Creek and runs along George St. and outlets near north of North St.
3. Arran-Elderslie is advised to consider an annual fund amount of $200,000 towards storm sewer system upgrades, in order that deficiencies are eliminated by way of sustained effort to bring about improvements.

Chesley

Chesley is located north of both Walkerton on Bruce Road 19 and north of Hanover along Bruce County Road 10. Chesley has a population of approximately 1,879 and includes 866 dwellings (as per 2021 census). Chesley is spread over approximately 1.91 km2 of land. The North Saugeen River winds through Chesley, entering from the east and travelling to the west end of the community and continues to the west to meet the Saugeen River. The majority of Chesley slopes toward the North Saugeen River, however few stormwater networks in north and southernmost part of Chesley slope in a direction opposite from the river.

Chesley Minor Stormwater System

- Collects runoff from 1:2-year or 1:5-year storm events
- Total storm sewer length: ~12.7 km (100 mm to 1050 mm diameter)
- Storm structures: ~465 total.
- Most common pipe size: 300 mm ø.
- 55.8% of all sewers are 300 mm ø or smaller.
- MECP Design Guideline: Minimum pipe size should be 200 mm ø.

Chesley Major Stormwater System

- Conveys excess runoff that exceeds the capacity of the minor system
- Uses overland flow through road corridors and roadside ditches to reach appropriate outlets.
- Flooding Risk occurs when catch basins overflow during large storms.
- Road corridors must have proper slope, curb & gutter, or ditches to effectively convey runoff.
- Streets without curb & gutter rely on ditches, which must have proper outlets.
- If ditches or road corridors lack outlets, runoff can back up and flood adjacent properties.
- Most roads in Chesley have curb & gutter or roadside ditches with outlets.
- Some locations lack curbs, reducing overland flow capacity.

🏠 Chesley Stormwater System on Private Property

- Several stormwater assets are currently located on private property.
  - Lack of easements can complicate access and maintenance

🔧 Key Deficiencies – Chesley Stormwater System

- Reverse Slope Sewers
  - Water cannot flow by gravity.
  - Causes backup until enough head pressure builds.
- Structures with No Outlet or Missing Information
  - Lack of downstream connection or incomplete data.
  - Leads to flooding during rainfall events.
- Storm Assets on Private Property
  - Located without easements.
  - Limits municipal access for maintenance or upgrades.
- Roads Without Curb & Gutter
  - Reduces capacity for overland flow during major storms.
  - Increases flood risk.
- Filled-In or Inadequate Ditches
  - Obstructs major stormwater conveyance.
  - Can cause localized flooding.
- Undersized Pipes
  - Many pipes are 300 mm ø or smaller.
  - Limits system capacity during peak flows.
- Lack of Proper Outlets
  - Both sewers and ditches without defined outlets can cause water to back up.
  - Increases risk of flooding adjacent properties.

Existing Stormwater Conditions Modelling Results

1:5-Year Storm Event

- 15 out of 465 structures will flood.
- 139 structures and sewers will surcharge.
- Total flood volume: 403 m^3.
- Major flooding structures:
  - CBMH 208 (Centennial St.): 107 m^3
  - CBMH 212 (Tower Rd.): 68 m^3
  - CBMH 233 (Martha Ave.): 46 m^3
  - CBMH 203 (Tower Rd.): 31 m^3
  - These 4 structures = 62% of total flooding.
- High-risk streets: Tower Rd., Martha Ave., Centennial St., 1st Ave North.

1:100-Year Storm Event

- 81 structures will flood.
- 270 structures will surcharge.
- Total flood volume: 5,503 m^3.

- Major flooding structures:
    - CB 907 (4th Ave SE): 486 m³
    - CB 937 (Centennial St.): 357 m³
    - CBMH 208 (Centennial St.): 333 m³
    - CBMH 212 (Tower Rd.): 312 m³
    - These 4 structures = 27% of total flooding.
- High-risk areas: Southern Tower Rd., 4th St. NE.
    - Lack of curb & gutter or sufficient ditches increases flood risk.

Key Concerns

- High-risk streets: Tower Rd., Martha Ave., Centennial St., 1st Ave North.
- High-risk areas: Southern Tower Rd., 4th St. NE.
    - Lack of curb & gutter or sufficient ditches increases flood risk.

Proposed System Upgrades

Based on the modelling results of Chesley's existing stormwater system, seven priority upgrades have been identified to mitigate flooding during a 1:5-year storm event. These upgrades are prioritized according to the volume of flooding they would eliminate. The proposed improvements target areas with significant surcharging and flooding, aiming to enhance system capacity and reduce flood risk. Two of the upgrades are located on Bruce County roads but are included due to their importance in achieving overall system improvement. These deficiencies will be communicated to Bruce County.

Upgraded Stormwater System Modelling Results

1:5-Year Storm Event

- No storm structures flood after upgrades.
- Surcharged structures reduced from 139 to 112.
- Flooding eliminated for this design storm event.

1:100-Year Storm Event

- Flooded structures reduced from 81 to 74.
- Surcharged structures increased from 270 to 274 due to:
    - More runoff stored in large diameter sewers.
    - Less flooding = more surcharging.
- Total flood volume reduced from 5,503 m³ to 4,427 m³.
- System not designed for 1:100-year storms but upgrades significantly improve performance.

Storm System Costs

The total estimated replacement costs of the existing storm infrastructure in Chesley are $3,897,582.19 (2024 costs). These costs include costs associated with re-establishing ditches in areas where the ditches have been filled in by residents but excludes costs for other concurrent upgrades to municipal infrastructure.

The five (5) priority upgrades proposed to the municipal-owned system to mitigate the flooding risks during a 1:5-year storm are $746,864 and are highlighted in the chart below.

Chesley Stormwater System – Recommended Upgrades by Priority Ranking

* Priority ranking based solely on reduction in flooding during 1:5-year storm. Projects on Bruce County roads are excluded from this spreadsheet.

Priority Ranking	Upgrade Description	Location	Budget Project Cost (Includes Storm Sewers, Structures, Curb & Gutter Removal and Replacement)
1	Road reconstruction and storm sewer replacement	Tower Road	$437,695
2	Storm sewer replacement	2nd St SW	$27,681
3	Storm sewer replacement/Ditch rehabilitation	2nd St SE	$28,000
4	Storm sewer replacement	2nd Ave. SE	$36,330
5	Storm sewer replacement	4th Ave. SE	$67,785
Total Construction Cost			**$597,491**
Engineering & Contingencies @ 25%			**$149,373**
Total Project Cost (Excluding HST)			**$746,864**

Recommendations of the Study

The following recommendations are presented:

1) The five (5) system upgrades identified in this report are recommended to be prioritized to eliminate flooding during the 1:5-year storm. However, they should be combined with future road reconstructions, watermain and sanitary sewer projects. Proper curb & gutter or roadside ditches are recommended to be added (if nonexistent) to the project(s) to ensure flooding during severe storms, is conveyed to a sufficient outlet.

2) Arran-Elderslie is advised to consider an annual arbitrary fund amount of $ 300,000 towards storm sewer system upgrades, in order that deficiencies are eliminated by way of sustained effort to bring about improvements and to maintain sufficient reserves for future upgrades.

Link to Strategic/Master Plan

6.1 Protecting Infrastructure, Recreation and Natural Assets

Financial Impacts/Source of Funding/Link to Procurement Policy

The estimated replacement cost for stormwater infrastructure in Tara, Paisley, and Chesley is $13,105,572.19 (2024). These costs could rise if inspections reveal damaged or collapsed pipes. Priority upgrades are recommended at $4,491,809.94 and should ideally align with other planned projects, though budget constraints may prevent this.

The study recommends an annual arbitrary fund contribution of:

- Tara - $100,000
- Paisley $200,000
- Chesley - $300,000

An annual total annual arbitrary fund contribution of $600,000 towards infrastructure capital.

Approved by: Emily Dance, Chief Administrative Officer