Water/Wastewater Treatment & Compliance

Mike Jensen
- Director of W/WWT & Compliance
- 10th year with the City
Water/Wastewater Treatment & Compliance

Mike Jensen
- Director of W/WWT & Compliance
- 10th year with the City
- 20 year Marine Engineer with the Royal Canadian Navy
Agenda

• How our Budgets Work
• Linear Projects
• Water Facilities Projects
• Bypassing
• Wastewater Facilities projects
• Reduction of Energy
• Update on Compliance Operations
Water/Wastewater Budgets

- Water rate based i.e. meter
Water/Wastewater Budgets

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• 2 parts to our budget - $80 mil total
Water/Wastewater Budgets

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• Op’s – approx. $27 mil facilities and $13 mil for Linear Infrastructure
Water/Wastewater Budgets

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- 2 parts to our budget - $80 mil total
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- Capital Improvement – approx. $31 mil
Water/Wastewater Budgets

- Water rate based i.e. meter
- 2 parts to our budget - $80 mil total
- Op’s – approx. $27 mil facilities and $13 mil for Linear Infrastructure
- Capital Improvement – approx. $31 mil
- $9 mil for engineering and support
2019 Infrastructure Capital Planning Budget

Projects selected on asset management prioritization considering condition of asset, asset life cycle, and coordination of asset classes (i.e. coordinated work on roads, watermains, sewers etc).

- Roads and Bridges - $50.5 mil
- Drainage - $2.3 mil
- Water Linear and Plants - $21.5 mil
- Wastewater Linear and Plants - $18.4 mil
2019 Infrastructure Capital Planning Budget

Drainage - $7.5 mil
- Paquette Whitson Drain - $7 mil

Water and Wastewater Linear - $17.4 mil
- Water and Sewer with Roads - $6.2 mil
- Maley Drive watermain - $2.8 mil
- Barry Downe/Westmount lining - $1.5 mil
Water Projects

• Wanap/Intake Valve Controls Upgrades
• Garson Wells Water Quality
• M&J Wells Water Quality
• Kingsway Booster Demolition/Montrose Control Upgrades
• Wanapitei WTP Transformer Upgrades / Reactivator Assessment/Blower replacement
Water Projects continued:

- Val Caron Booster Station Upgrades
- Well Facility Audits-Implementation of recommendations
- Generator systems (TSSA) upgrades
- Tanks inspection/rehab
- David St Plant HVAC upgrades
Wastewater Terminology

- Overflow
Wastewater Terminology

• Over design Capacity

Figure 6 – Demand Levels Out
Wastewater Terminology

• Combined Sewer Overflow
Wastewater Terminology

- **Bypass** – Follow the red line
Sewer Bypass

• Environmental Commissioner Diane Sax’s list
Sewer Bypass

• Environmental Commissioner Diane Sax’s list
• Referred to Combined Sewer Overflow
Sewer Bypass

- Environmental Commissioner Diane Sax’s list
- Referred to Combined Sewer Overflow
- Continued program
  - Google “Sudbury Bypass Alert”
Sewer Bypass – Last Week

- Annual average flow of 65, 000 M³
Sewer Bypass – Last Week

- Annual average flow of 65,000 M³
- Total Flow of 148,000 M³ for the day
Sewer Bypass – Last Week

- Annual average flow of 65,000 M³
- Total Flow of 148,000 M³ for the day
- Peak flow for 9 hours at 200,000 M³/day
Sewer Bypass – Last Week

- Annual average flow of 65,000 M³
- Total Flow of 148,000 M³ for the day
- Peak flow for 9 hours at 200,000 M³/day
- Total Treatment Capacity of 160,000 M³
Sewer Bypass – Last Week

• Annual average flow of 65,000 M³
• Total Flow of 148,000 M³ for the day
• Peak flow for 9 hours at 200,000 M³/day
• Total Treatment Capacity of 160,000 M³
• Total bypass amount of 53,000 M³
  – 20 hours total over 2 days
Growth and Infrastructure

• What are we doing to mitigate bypassing and improve WW Treatment?
2019 Infrastructure Capital Planning Budget

- Major Works include
  - St. Charles Lift Station - $12.5 mil
  - Sud Wastewater Treatment Plant - $6.2 mil
  - Levesque Lift Station - $3.0 mil
  - Valley Well Upgrades - $3.3 mil

- Works Completed/In Progress
Lively/Walden Sanitary Sewer Upgrade Phase 1
Lively/Walden Sanitary Sewer Upgrade Phase 2
Lively/Walden Sanitary Sewer Upgrade Phase 2
Azilda Plant Upgrade
Walden Plant
Valley East Plant

- Upgrades to the existing sludge management
- Upgrades to the existing aeration system and electrical systems
Other Plant Work

- Coniston Plant: Condition Assessment, design, upgrades
- Levack Plant HVAC upgrades
Lagoons

- Capreol lagoon upgrades to meet effluent limits
- Other lagoon upgrades
Lift Station Projects

• Lift Stations:
  • Laurier LS
  • Levesque LS
  • Walford LS
  • Nickel LS
2018 Projects……

- Lift stations: Various LS audits and upgrades
- Lively Plant Rehabilitation
- Valley East WWTP
- Lagoons
- Sudbury Plant
Previous Projects……

• Septage Receiving
  – 6400 loads or 58,000 M³ treated since 2015
Previous Projects……

• Septage Receiving
  – 6400 loads or 58,000 M³ treated since 2015

• Biosolids/sludge – 2017 and 2018
  – 249,000 M³ of sludge and 6800 dry tonnes
SWWTP

• New Turbo-Blower
• Electrical upgrades
• New Gen-Set/Substation
• Energy Reduction
# Reduction of Energy in Capital Works

<table>
<thead>
<tr>
<th>Facility</th>
<th>Rebates Received</th>
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<tbody>
<tr>
<td>Wanapitei Water Treatment Plant</td>
<td>$111,773</td>
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<tr>
<td>David St. Water Treatment Plant</td>
<td>$31,410</td>
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<td>Sudbury Wastewater Treatment Plant</td>
<td>$244,000</td>
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<td>Azilda Wastewater Treatment Plant</td>
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<td>Chelmsford Wastewater Treatment Plant</td>
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<td>Valley East Wastewater Treatment Plant</td>
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<td>$2,780</td>
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<tr>
<td>Dowling Wastewater Treatment Plant</td>
<td>$2,252</td>
</tr>
<tr>
<td><strong>Total Rebates Received</strong></td>
<td><strong>$466,565</strong></td>
</tr>
</tbody>
</table>
Reduction of Energy in Capital Works
Reduction of Energy in Capital Works

- Estimated $180,000 annual savings as a result of preventative maintenance programs
Reduction of Energy in Capital Works

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- GA cost avoidance in 2017 - $211,900
- GA cost avoidance in 2018 - $298,700
Reduction of Energy in Capital Works

- Estimated $180,000 annual savings as a result of preventative maintenance programs
- GA cost avoidance in 2017 - $211,900
- GA cost avoidance in 2018 - $298,700
- Total rebate and avoidance of $ 1.1 mil over 5 years
Growth and Infrastructure

• Approval for a 5 year pilot project – AMTF
Update on Compliance Operations

- Approval for a 5 year pilot project – AMTF
- Continuing with E & O
  - RIISP, 170 approvals since 2014 ($200k in rebates)
  - Backwater Valve, Sump pump & Eaves trough disconnect
  - Compliance Officer Visits
Update on Compliance Operations

• Compliance Officer Visits
  • 850 ICI inspections annually
  • 20 Charges laid = $30,000 in fines
    – Tamper with fire hydrant/public works structure
    – Discharge contaminated water into environment
    – Intentional discharge of deleterious material into catch basin
    – Improper swimming pool discharge