



City of Mora
Kanabec County, Minnesota
Meeting Agenda
Public Utilities Commission

Mora City Hall
101 Lake St. S
Mora, MN 55051

Monday, November 16, 2020

3:00 PM

Mora City Hall

- 1. Call to Order**
- 2. Roll Call**
- 3. Adopt Agenda** *(No item of business shall be considered unless it appears on the agenda for the meeting. Council members may add items to the agenda prior to adoption of the agenda.)*
- 4. Consent Agenda** *(Those items listed under Consent Agenda are considered to be routine by the City Council and will be acted upon by one motion under this agenda item. There will be no separate discussion of these items, unless a Council Member so requests, in which event, the item will be removed from the consent agenda and considered immediately after the adoption of the consent agenda.)*
 - a. Regular Meeting Minutes – October 19, 2020
 - b. October 2020 Claims
- 5. Open Forum** *(Individuals may address the council about any item not contained on the regular agenda. There is a maximum of fifteen (15) minutes set aside for open forum. A maximum of three (3) minutes is allotted per person. The City Council will take no official action on items discussed at the forum, with the exception of referral to staff for future report.)*
- 6. Special Business**
 - None
- 7. Public Hearings**
 - a. Proposed Assessment of Unpaid Utility Bills
- 8. New Business**
 - a. 2021 Salary Schedules/ Pay Plan
 - b. 2021 PUC Meeting Schedule
 - c. America's Water Infrastructure Act Risk & Resilience Assessment
- 9. Old Business**
 - a. WWTP Project Contract Discussion
 - b. 2021 Proposed Budget
- 10. Communications**
 - a. Quarterly Financial Report
 - b. Utility Billing Monthly Report – October 2020
 - c. Utility Billing Adjustments Report – October 2020
- 11. Reports**
 - a. Public Utilities General Manager
 - b. Public Works Director
 - c. Commissioner Baldwin
 - d. Commissioner Christianson
 - e. Chair Ardner
- 12. Adjournment**

Pursuant to due call and notice thereof, Commissioner Ardner called to order the regular meeting of the Mora Public Utilities Commission at 3:00 PM on Monday, October 19, 2020 in the city hall council chambers.

2. **Roll Call:** Present: Commissioners Greg Ardner, Brett Baldwin, and Ryan Christianson
Absent: none
Staff Present: Utilities General Manager Crawford, Public Works Director Kohlgraf, Utility Billing Clerk Bliss, and Deputy City Clerk Yoder
3. **Adopt Agenda:** MOTION made by Christianson, seconded by Baldwin, and unanimously carried to approve the agenda as presented.
4. **Consent Agenda:** MOTION made by Baldwin, seconded by Christianson, and unanimously carried to approve the consent agenda as presented.
 - a. Regular Meeting Minutes – September 14, 2020
 - b. Special Meeting Minutes – October 2, 2020
 - c. September 2020 Claims
5. **Open Forum:** No one spoke at open forum.
6. **Special Business:** There were no special business items to discuss.
7. **New Business:**
 - a. **Sanitary Sewer and Well Exemption Request:** Kohlgraf reported Lynelle Parker, of 1860 Snake River Trail, requested a sanitary sewer and well exemption for the purpose of developing property near Dala Lane for a single-family residence. Staff determined municipal service was not within a reasonable distance of the Parker's property constituting a hardship per city code §50.12(B)(1) and therefor recommended approval of the request. MOTION made by Christianson, seconded by Baldwin, and unanimously carried to recommend approval of the sanitary sewer and well exemption request to the city council.
 - b. **Sanitary Sewer and Well Exemption Request:** Kohlgraf reported Lynelle Parker, of 1870 Snake River Trail, requested a sanitary sewer and well exemption for the purpose of developing property near Dala Lane for a single-family residence. Staff determined municipal service was not within a reasonable distance of the Parker's property constituting a hardship per city code §50.12(B)(1) and therefor recommended approval of the request. MOTION made by Christianson, seconded by Baldwin, and unanimously carried to recommend approval of the sanitary sewer and well exemption request to the city council
 - c. **Overhead and Underground Construction Specifications Policy:** The PUC reviewed and considered the adoption of an overhead and underground construction specifications policy written by Minnesota Municipal Utilities Association (MMUA) to be used when updating, repairing, and constructing the MMU electrical distribution system. MOTION made by Baldwin, seconded by Christianson, and unanimously carried to adopt the MMUA Overhead and Underground Construction Specifications Manual as a policy for the electric utility.
8. **Old Business:** There were no old business items to discuss.
9. **Communications:** The following communications were reviewed.
 - a. Utility Billing Monthly Report – September 2020

October 19, 2020

- b. Utility Billing Adjustments Report – September 2020
- c. Quarterly Sanitary Sewer Response Report

10. Reports:

- a. Public Utilities General Manager: Crawford reported the 2021 budget would be presented at the next regular meeting for approval, Jessica Gravening has acclimated to the utility billing clerk position well and Crawford had received compliments about her friendliness. Crawford reported a resident filed a complaint directly with the State PUC in lieu of speaking with the Mora PUC, Crawford and Bliss were working with the State PUC to resolve the issue.
- b. Public Works Director: Kohlgraf reported working on some hydrants with internal issues. The Mora Marine lift station was installed and functioning, staff were vacuuming out the remaining sewage prior to abandoning the lines.
- c. Commissioner Baldwin: Nothing new to report.
- d. Commissioner Christianson: Nothing new to report.
- e. Chairperson Ardner: Ardner commented the Electric Vehicle Charging Stations (EVCS) appeared to be close to operating; it was reported the delay for implementation was due to receiving a smashed part.

- 11. Adjournment:** MOTION made by Christianson, seconded by Baldwin, and unanimously carried to adjourn at 3:17 PM.

Chair

Secretary

**CITY OF MORA
CHECK LIST-PUC**

| CHECK # | Search Name | Fund Descr | Dept Descr | Last Dim Descr | Comments | Amount |
|---|----------------------|--------------|-------------------|-----------------------|---------------------------|--------------|
| CHECK # 000526 COMPLETE MERCHANT SOLUTIONS | | | | | | |
| 000526 | COMPLETE MERCHANT | ELECTRIC FUN | ELECTRIC ADMINIST | Payment Processing E | CREDIT CARD PYMT PROCESSI | \$323.00 |
| 000526 | COMPLETE MERCHANT | WATER FUND | WATER ADMINISTR | Payment Processing E | CREDIT CARD PYMT PROCESSI | \$161.50 |
| 000526 | COMPLETE MERCHANT | SEWER FUND | SEWER ADMINISTR | Payment Processing E | CREDIT CARD PYMT PROCESSI | \$161.50 |
| CHECK # 000526 COMPLETE MERCHANT SOLUTIONS | | | | | | \$646.00 |
| CHECK # 000527 ONLINE UTILITY EXCHANGE | | | | | | |
| 000527 | ONLINE UTILITY EXCHA | ELECTRIC FUN | ELECTRIC ADMINIST | Cust UB/Collection | NEW UB CUSTOMER CREDIT C | \$89.40 |
| CHECK # 000527 ONLINE UTILITY EXCHANGE | | | | | | \$89.40 |
| CHECK # 000529 MN DEPT OF REVENUE | | | | | | |
| 000529 | MN DEPT OF REVENUE | ELECTRIC FUN | | Fixed Assets | SALES & USE TAX PYMT-SEPT | \$7.00 |
| 000529 | MN DEPT OF REVENUE | ELECTRIC FUN | | Sales Tax Payable | SALES & USE TAX PYMT-SEPT | \$22,139.00 |
| 000529 | MN DEPT OF REVENUE | ELECTRIC FUN | GENERATION & PO | Office Supplies | SALES & USE TAX PYMT-SEPT | \$2.00 |
| 000529 | MN DEPT OF REVENUE | ELECTRIC FUN | GENERATION & PO | Other Operating Suppl | SALES & USE TAX PYMT-SEPT | \$8.00 |
| 000529 | MN DEPT OF REVENUE | ELECTRIC FUN | GENERATION & PO | Repair/Maint - Bldg & | SALES & USE TAX PYMT-SEPT | \$2.00 |
| 000529 | MN DEPT OF REVENUE | ELECTRIC FUN | GENERATION & PO | Small Tools & Equipm | SALES & USE TAX PYMT-SEPT | \$7.00 |
| 000529 | MN DEPT OF REVENUE | ELECTRIC FUN | GENERATION & PO | Garbage Removal | SALES & USE TAX PYMT-SEPT | \$6.00 |
| 000529 | MN DEPT OF REVENUE | ELECTRIC FUN | GENERATION & PO | Landfill Gen Exp | SALES & USE TAX PYMT-SEPT | \$1.00 |
| 000529 | MN DEPT OF REVENUE | ELECTRIC FUN | ELECTRIC DISTRIBU | Maint of Substation E | SALES & USE TAX PYMT-SEPT | \$5.00 |
| 000529 | MN DEPT OF REVENUE | ELECTRIC FUN | ELECTRIC DISTRIBU | Small Tools & Equipm | SALES & USE TAX PYMT-SEPT | \$45.00 |
| 000529 | MN DEPT OF REVENUE | ELECTRIC FUN | ELECTRIC DISTRIBU | Misc Distribution Exp | SALES & USE TAX PYMT-SEPT | \$13.00 |
| 000529 | MN DEPT OF REVENUE | ELECTRIC FUN | ELECTRIC DISTRIBU | Line Transformer Exp | SALES & USE TAX PYMT-SEPT | \$2.00 |
| 000529 | MN DEPT OF REVENUE | ELECTRIC FUN | ELECTRIC DISTRIBU | Maint of Underground | SALES & USE TAX PYMT-SEPT | \$1.00 |
| 000529 | MN DEPT OF REVENUE | ELECTRIC FUN | ELECTRIC DISTRIBU | Truck Expense | SALES & USE TAX PYMT-SEPT | \$13.00 |
| 000529 | MN DEPT OF REVENUE | ELECTRIC FUN | ELECTRIC ADMINIST | Office Supplies | SALES & USE TAX PYMT-SEPT | \$30.00 |
| 000529 | MN DEPT OF REVENUE | ELECTRIC FUN | ELECTRIC ADMINIST | Telephone | SALES & USE TAX PYMT-SEPT | \$15.00 |
| 000529 | MN DEPT OF REVENUE | WATER FUND | | Sales Tax Payable | SALES & USE TAX PYMT-SEPT | \$1,047.00 |
| CHECK # 000529 MN DEPT OF REVENUE | | | | | | \$23,343.00 |
| CHECK # 000531 PAYLIANCE | | | | | | |
| 000531 | PAYLIANCE | ELECTRIC FUN | ELECTRIC ADMINIST | Payment Processing E | E-CHECK PYMT PROCESSING F | \$33.44 |
| 000531 | PAYLIANCE | WATER FUND | WATER ADMINISTR | Payment Processing E | E-CHECK PYMT PROCESSING F | \$16.73 |
| 000531 | PAYLIANCE | SEWER FUND | SEWER ADMINISTR | Payment Processing E | E-CHECK PYMT PROCESSING F | \$16.73 |
| CHECK # 000531 PAYLIANCE | | | | | | \$66.90 |
| CHECK # 000532 SMMPA | | | | | | |
| 000532 | SMMPA | ELECTRIC FUN | | Accounts Payable | POWER PURCHASED | \$304,762.10 |
| CHECK # 000532 SMMPA | | | | | | \$304,762.10 |
| CHECK # 000533 NEIGHBORHOOD NATIONAL BANK | | | | | | |
| 000533 | NEIGHBORHOOD NATIO | ELECTRIC FUN | ELECTRIC ADMINIST | Payment Processing E | MONTHLY UB ACH FILE FEE | \$30.00 |
| 000533 | NEIGHBORHOOD NATIO | ELECTRIC FUN | ELECTRIC ADMINIST | Payment Processing E | MONTHLY BUSINESS ONLINE | \$10.00 |
| 000533 | NEIGHBORHOOD NATIO | ELECTRIC FUN | ELECTRIC ADMINIST | Bad Debts/NSF Check | SPECIAL HANDLING INSTRUCT | \$10.00 |
| CHECK # 000533 NEIGHBORHOOD NATIONAL BANK | | | | | | \$50.00 |
| CHECK # 000535 MORA MUNICIPAL UTILITIES | | | | | | |
| 000535 | MORA MUNICIPAL UTILI | ELECTRIC FUN | GENERATION & PO | Storm Water | OCT UTILITIES | \$15.96 |
| 000535 | MORA MUNICIPAL UTILI | ELECTRIC FUN | GENERATION & PO | Sewer | OCT UTILITIES | \$43.77 |
| 000535 | MORA MUNICIPAL UTILI | ELECTRIC FUN | GENERATION & PO | Water | OCT UTILITIES | \$85.88 |
| 000535 | MORA MUNICIPAL UTILI | WATER FUND | WATER SUPPLY | Electricity | OCT UTILITIES | \$695.15 |
| 000535 | MORA MUNICIPAL UTILI | WATER FUND | WATER SUPPLY | Storm Water | OCT UTILITIES | \$20.10 |
| 000535 | MORA MUNICIPAL UTILI | WATER FUND | WATER TREATMENT | Storm Water | OCT UTILITIES | \$10.05 |
| 000535 | MORA MUNICIPAL UTILI | WATER FUND | WATER TREATMENT | Electricity | OCT UTILITIES | \$720.25 |
| 000535 | MORA MUNICIPAL UTILI | WATER FUND | WATER DISTRIBUTI | Electricity | OCT UTILITIES | \$38.88 |

**CITY OF MORA
CHECK LIST-PUC**

| CHECK # | Search Name | Fund Descr | Dept Descr | Last Dim Descr | Comments | Amount |
|--|----------------------|--------------|-------------------|------------------------|---------------------------|-------------|
| 000535 | MORA MUNICIPAL UTILI | WATER FUND | WATER DISTRIBUTI | Storm Water | OCT UTILITIES | \$11.23 |
| 000535 | MORA MUNICIPAL UTILI | SEWER FUND | SEWER LIFT STATIO | Storm Water | OCT UTILITIES | \$10.05 |
| 000535 | MORA MUNICIPAL UTILI | SEWER FUND | SEWER LIFT STATIO | Electricity | OCT UTILITIES | \$700.73 |
| 000535 | MORA MUNICIPAL UTILI | SEWER FUND | WASTEWATER TREA | Storm Water | OCT UTILITIES | \$20.69 |
| 000535 | MORA MUNICIPAL UTILI | SEWER FUND | WASTEWATER TREA | Electricity | OCT UTILITIES | \$3,214.94 |
| 000535 | MORA MUNICIPAL UTILI | SEWER FUND | WASTEWATER TREA | Water | OCT UTILITIES | \$104.29 |
| CHECK # 000535 MORA MUNICIPAL UTILITIES | | | | | | \$5,691.97 |
| CHECK # 050916 FETTERS, TIANNA | | | | | | |
| 050916 | FETTERS, TIANNA | ELECTRIC FUN | | Undistributed Receipts | REFUND METER DEPOSIT-111 | -\$21.07 |
| CHECK # 050916 FETTERS, TIANNA | | | | | | -\$21.07 |
| CHECK # 051082 BRISSON, AMY | | | | | | |
| 051082 | BRISSON, AMY | ELECTRIC FUN | | Undistributed Receipts | REFUND METER DEPOSIT-500 | -\$72.35 |
| CHECK # 051082 BRISSON, AMY | | | | | | -\$72.35 |
| CHECK # 051403 WALBERG, DAVID S | | | | | | |
| 051403 | WALBERG, DAVID S | ELECTRIC FUN | | Undistributed Receipts | REFUND METER DEPOSIT-700 | -\$38.22 |
| CHECK # 051403 WALBERG, DAVID S | | | | | | -\$38.22 |
| CHECK # 051548 TOWLE, CHLOE | | | | | | |
| 051548 | TOWLE, CHLOE | ELECTRIC FUN | | Undistributed Receipts | REFUND DEPOSIT-431 W CEN | -\$148.05 |
| CHECK # 051548 TOWLE, CHLOE | | | | | | -\$148.05 |
| CHECK # 051552 WOLD, BRANDI | | | | | | |
| 051552 | WOLD, BRANDI | ELECTRIC FUN | | Undistributed Receipts | DEPOSIT REFUND-927 S UNIO | -\$9.35 |
| CHECK # 051552 WOLD, BRANDI | | | | | | -\$9.35 |
| CHECK # 052186 STRAUCH, CRYSTAL & ANDREW | | | | | | |
| 052186 | STRAUCH, CRYSTAL & A | ELECTRIC FUN | | Undistributed Receipts | REFUND METER DEPOSIT-431 | -\$74.98 |
| CHECK # 052186 STRAUCH, CRYSTAL & ANDREW | | | | | | -\$74.98 |
| CHECK # 052648 JONES, TRAVONDA | | | | | | |
| 052648 | JONES, TRAVONDA | ELECTRIC FUN | | Undistributed Receipts | REFUND METER DEPOSIT-504 | -\$158.19 |
| CHECK # 052648 JONES, TRAVONDA | | | | | | -\$158.19 |
| CHECK # 055242 CARDMEMBER SERVICE | | | | | | |
| 055242 | CARDMEMBER SERVICE | ELECTRIC FUN | ELECTRIC DISTRIBU | Meetings, Training, & | HOTEL FOR JK TO OH SCHOOL | \$298.71 |
| 055242 | CARDMEMBER SERVICE | ELECTRIC FUN | ELECTRIC DISTRIBU | Miscellaneous | ELECTRICAL LICENSE | \$100.00 |
| CHECK # 055242 CARDMEMBER SERVICE | | | | | | \$398.71 |
| CHECK # 055339 BERGSTADT, GARY | | | | | | |
| 055339 | BERGSTADT, GARY | ELECTRIC FUN | GENERATION & PO | Uniforms | WINTER & SUMMER BOOTS | \$379.08 |
| CHECK # 055339 BERGSTADT, GARY | | | | | | \$379.08 |
| CHECK # 055343 CITY OF QUAMBA | | | | | | |
| 055343 | CITY OF QUAMBA | SEWER FUND | | Quamba Payable-Rese | ANNL REIMB W/ DELINQUENT | \$10,018.65 |
| CHECK # 055343 CITY OF QUAMBA | | | | | | \$10,018.65 |
| CHECK # 055348 EAST CENTRAL ENERGY | | | | | | |
| 055348 | EAST CENTRAL ENERGY | SEWER FUND | SEWER LIFT STATIO | Electricity | ELECT | \$107.42 |
| CHECK # 055348 EAST CENTRAL ENERGY | | | | | | \$107.42 |
| CHECK # 055351 FELGER, MATT | | | | | | |
| 055351 | FELGER, MATT | ELECTRIC FUN | GENERATION & PO | Uniforms | BOOTS | \$64.38 |
| CHECK # 055351 FELGER, MATT | | | | | | \$64.38 |

**CITY OF MORA
CHECK LIST-PUC**

| CHECK # | Search Name | Fund Descr | Dept Descr | Last Dim Descr | Comments | Amount |
|---|----------------------|--------------|-------------------|------------------------|----------------------------|-------------|
| CHECK # 055358 MIDCO | | | | | | |
| 055358 | MIDCO | ELECTRIC FUN | ELECTRIC ADMINIST | Telephone | PHONE & INTERNET | \$127.37 |
| 055358 | MIDCO | WATER FUND | WATER ADMINISTR | Telephone | PHONE & INTERNET | \$180.81 |
| CHECK # 055358 MIDCO | | | | | | |
| | | | | | | \$308.18 |
| CHECK # 055359 MN MUNICIPAL UTILITIES ASSN | | | | | | |
| 055359 | MN MUNICIPAL UTILITI | ELECTRIC FUN | ELECTRIC DISTRIBU | Meetings, Training, & | APPRENTICE LINEWORKER DE | \$1,750.00 |
| CHECK # 055359 MN MUNICIPAL UTILITIES ASSN | | | | | | |
| | | | | | | \$1,750.00 |
| CHECK # 055361 MORA MUNICIPAL UTILITIES | | | | | | |
| 055361 | MORA MUNICIPAL UTILI | SEWER FUND | | Quamba Payable-Rese | QUAMBA DELINQ ACCTS FROM | \$4,172.35 |
| CHECK # 055361 MORA MUNICIPAL UTILITIES | | | | | | |
| | | | | | | \$4,172.35 |
| CHECK # 055362 MORA MUNICIPAL UTILITIES | | | | | | |
| 055362 | MORA MUNICIPAL UTILI | ELECTRIC FUN | ELECTRIC ADMINIST | Energy Conservation | PPW GIFT CERT TOWARDS HE | \$25.00 |
| CHECK # 055362 MORA MUNICIPAL UTILITIES | | | | | | |
| | | | | | | \$25.00 |
| CHECK # 055363 NEONLINK LLC | | | | | | |
| 055363 | NEONLINK LLC | ELECTRIC FUN | ELECTRIC ADMINIST | Payment Processing E | PAYMENT PROCESSING | \$119.00 |
| 055363 | NEONLINK LLC | WATER FUND | WATER ADMINISTR | Payment Processing E | PAYMENT PROCESSING | \$59.50 |
| 055363 | NEONLINK LLC | SEWER FUND | SEWER ADMINISTR | Payment Processing E | PAYMENT PROCESSING | \$59.50 |
| CHECK # 055363 NEONLINK LLC | | | | | | |
| | | | | | | \$238.00 |
| CHECK # 055369 VERIZON WIRELESS | | | | | | |
| 055369 | VERIZON WIRELESS | ELECTRIC FUN | ELECTRIC ADMINIST | Telephone | CELL PHONES | \$206.26 |
| 055369 | VERIZON WIRELESS | WATER FUND | WATER ADMINISTR | Telephone | CELL PHONES | \$82.69 |
| 055369 | VERIZON WIRELESS | SEWER FUND | SEWER ADMINISTR | Telephone | CELL PHONES | \$120.72 |
| CHECK # 055369 VERIZON WIRELESS | | | | | | |
| | | | | | | \$409.67 |
| CHECK # 055371 BENSON, JO ANN | | | | | | |
| 055371 | BENSON, JO ANN | ELECTRIC FUN | | Undistributed Receipts | REFUND OVERPYMT-349 S UNI | \$60.45 |
| CHECK # 055371 BENSON, JO ANN | | | | | | |
| | | | | | | \$60.45 |
| CHECK # 055374 FEDDER HOMES LLC | | | | | | |
| 055374 | FEDDER HOMES LLC | ELECTRIC FUN | | Undistributed Receipts | REFUND OVERPYMT-709 BLUE | \$8.65 |
| CHECK # 055374 FEDDER HOMES LLC | | | | | | |
| | | | | | | \$8.65 |
| CHECK # 055376 HARP, LYNDSEY | | | | | | |
| 055376 | HARP, LYNDSEY | ELECTRIC FUN | | Undistributed Receipts | REFUND METER DEPOSIT-301 | \$68.51 |
| CHECK # 055376 HARP, LYNDSEY | | | | | | |
| | | | | | | \$68.51 |
| CHECK # 055377 JONES, ANGELA | | | | | | |
| 055377 | JONES, ANGELA | ELECTRIC FUN | | Undistributed Receipts | REFUND METER DEPOSIT-511 | \$62.10 |
| CHECK # 055377 JONES, ANGELA | | | | | | |
| | | | | | | \$62.10 |
| CHECK # 055378 KANABEC CO AUDITOR/TREASURER | | | | | | |
| 055378 | KANABEC CO AUDITOR/ | ELECTRIC FUN | | Accounts Payable | REISSUE CHECK FOR AUG JAIL | \$545.00 |
| CHECK # 055378 KANABEC CO AUDITOR/TREASURER | | | | | | |
| | | | | | | \$545.00 |
| CHECK # 055379 KRAFT, NIKKI | | | | | | |
| 055379 | KRAFT, NIKKI | ELECTRIC FUN | | Undistributed Receipts | REFUND METER DEPOSIT-500 | \$158.36 |
| CHECK # 055379 KRAFT, NIKKI | | | | | | |
| | | | | | | \$158.36 |
| CHECK # 055380 MIDWAY FORD | | | | | | |
| 055380 | MIDWAY FORD | SEWER FUND | | Fixed Assets | 2020 FORD F550 | \$40,531.57 |
| CHECK # 055380 MIDWAY FORD | | | | | | |
| | | | | | | \$40,531.57 |

**CITY OF MORA
CHECK LIST-PUC**

| CHECK # | Search Name | Fund Descr | Dept Descr | Last Dim Descr | Comments | Amount |
|---|-----------------------|--------------|-------------------|------------------------|----------------------------|----------|
| CHECK # 055382 MN DEPT OF COMMERCE-UNCLM PROP | | | | | | |
| 055382 | MN DEPT OF COMMERC | ELECTRIC FUN | | Undistributed Receipts | 2020 UNCLAIMED PROPERTY- | \$148.05 |
| 055382 | MN DEPT OF COMMERC | ELECTRIC FUN | | Undistributed Receipts | 2020 UNCLAIMED PROPERTY- | \$72.35 |
| 055382 | MN DEPT OF COMMERC | ELECTRIC FUN | | Undistributed Receipts | 2020 UNCLAIMED PROPERTY-F | \$21.07 |
| 055382 | MN DEPT OF COMMERC | ELECTRIC FUN | | Undistributed Receipts | 2020 UNCLAIMED PROPERTY-S | \$74.98 |
| 055382 | MN DEPT OF COMMERC | ELECTRIC FUN | | Undistributed Receipts | 2020 UNCLAIMED PROPERTY- | \$9.35 |
| 055382 | MN DEPT OF COMMERC | ELECTRIC FUN | | Undistributed Receipts | 2020 UNCLAIMED PROPERTY-J | \$158.19 |
| 055382 | MN DEPT OF COMMERC | ELECTRIC FUN | | Undistributed Receipts | 2020 UNCLAIMED PROPERTY- | \$38.22 |
| | | | | | | \$522.21 |
| CHECK # 055382 MN DEPT OF COMMERCE-UNCLM PROP | | | | | | |
| CHECK # 055385 ROGALSKI, KIRSTIE & MIKE TALMA | | | | | | |
| 055385 | ROGALSKI, KIRSTIE & M | ELECTRIC FUN | | Undistributed Receipts | REFUND METER DEPOSIT-220 | \$83.76 |
| | | | | | | \$83.76 |
| CHECK # 055385 ROGALSKI, KIRSTIE & MIKE TALMA | | | | | | |
| CHECK # 055386 SCHEUERMANN, AARON | | | | | | |
| 055386 | SCHEUERMANN, AARON | ELECTRIC FUN | | Undistributed Receipts | REFUND METER DEPOSIT-89 K | \$111.08 |
| | | | | | | \$111.08 |
| CHECK # 055386 SCHEUERMANN, AARON | | | | | | |
| CHECK # 055387 SCHROEDER, JENNIFER | | | | | | |
| 055387 | SCHROEDER, JENNIFER | ELECTRIC FUN | | Undistributed Receipts | REFUND OVERPYMT-414 BLUE | \$134.41 |
| | | | | | | \$134.41 |
| CHECK # 055387 SCHROEDER, JENNIFER | | | | | | |
| CHECK # 055388 SOUTHWARD, KYLE | | | | | | |
| 055388 | SOUTHWARD, KYLE | ELECTRIC FUN | | Undistributed Receipts | REFUND OVERPYMT-908 NELS | \$74.54 |
| | | | | | | \$74.54 |
| CHECK # 055388 SOUTHWARD, KYLE | | | | | | |
| CHECK # 055389 ULSTROM, DAVE | | | | | | |
| 055389 | ULSTROM, DAVE | ELECTRIC FUN | | Undistributed Receipts | REFUND METER DEPOSIT-200 | \$52.61 |
| | | | | | | \$52.61 |
| CHECK # 055389 ULSTROM, DAVE | | | | | | |
| CHECK # 055408 MIDCO | | | | | | |
| 055408 | MIDCO | SEWER FUND | SEWER ADMINISTR | Telephone | INTERNET | \$270.00 |
| | | | | | | \$270.00 |
| CHECK # 055408 MIDCO | | | | | | |
| CHECK # 055415 BORDER STATES ELECTRIC | | | | | | |
| 055415 | BORDER STATES ELECT | ELECTRIC FUN | | Distribution Inventory | METER | \$118.87 |
| | | | | | | \$118.87 |
| CHECK # 055415 BORDER STATES ELECTRIC | | | | | | |
| CHECK # 055436 ACE HARDWARE | | | | | | |
| 055436 | ACE HARDWARE | ELECTRIC FUN | GENERATION & PO | Small Tools & Equipm | SHOP VAC | \$74.99 |
| 055436 | ACE HARDWARE | ELECTRIC FUN | GENERATION & PO | Maint of Gen Equip | BATTERY BANK WATER | \$7.16 |
| 055436 | ACE HARDWARE | ELECTRIC FUN | ELECTRIC DISTRIBU | Misc Distribution Exp | HOLE SAWS, DRILL BITS | \$91.92 |
| 055436 | ACE HARDWARE | ELECTRIC FUN | ELECTRIC ADMINIST | Energy Conservation | HAND RADIO/FLASHLIGHT FO | \$24.99 |
| 055436 | ACE HARDWARE | WATER FUND | WATER TREATMENT | Repair/Maint - Bldg & | WATER TOWER KEY | \$1.50 |
| 055436 | ACE HARDWARE | WATER FUND | WATER DISTRIBUTI | Repair/Maint - Bldg & | HYDRANT PARTS | \$26.81 |
| 055436 | ACE HARDWARE | SEWER FUND | SEWER COLLECTION | Repair/Maint - Bldg & | MORA MARINE SEWER FITTIN | \$64.10 |
| 055436 | ACE HARDWARE | SEWER FUND | SEWER LIFT STATIO | Repair/Maint - Bldg & | ELBOW, LIFT ST ADAPTER, GL | \$50.23 |
| 055436 | ACE HARDWARE | SEWER FUND | WASTEWATER TREA | Repair/Maint - Bldg & | UMD SAMPLE BAGS | \$10.72 |
| | | | | | | \$352.42 |
| CHECK # 055436 ACE HARDWARE | | | | | | |
| CHECK # 055439 ARAMARK | | | | | | |
| 055439 | ARAMARK | SEWER FUND | WASTEWATER TREA | Other Operating Suppl | RUGS | \$86.22 |
| | | | | | | \$86.22 |
| CHECK # 055439 ARAMARK | | | | | | |
| CHECK # 055441 AUTO VALUE MORA | | | | | | |
| 055441 | AUTO VALUE MORA | ELECTRIC FUN | GENERATION & PO | Other Operating Suppl | DISP GLOVES | \$23.99 |

**CITY OF MORA
CHECK LIST-PUC**

| CHECK # | Search Name | Fund Descr | Dept Descr | Last Dim Descr | Comments | Amount |
|---|----------------------|--------------|-------------------|-------------------------|----------------------------|------------|
| 055441 | AUTO VALUE MORA | WATER FUND | WATER DISTRIBUTI | Repair/Maint - Bldg & | BATTERY CORE RETURN | -\$18.00 |
| 055441 | AUTO VALUE MORA | WATER FUND | WATER DISTRIBUTI | Other Operating Suppl | SHOP TOWELS | \$20.99 |
| 055441 | AUTO VALUE MORA | WATER FUND | WATER DISTRIBUTI | Lubricants & Additives | OIL | \$24.99 |
| 055441 | AUTO VALUE MORA | WATER FUND | WATER DISTRIBUTI | Repair/Maint - Bldg & | BATTERY | \$151.99 |
| 055441 | AUTO VALUE MORA | SEWER FUND | SEWER COLLECTION | Repair/Maint - Bldg & | BRAKE RPR PARTS, FUEL HOSE | \$96.97 |
| 055441 | AUTO VALUE MORA | SEWER FUND | SEWER COLLECTION | Repair/Maint - Bldg & | MORA MARINE SEWER RPR PA | \$85.74 |
| 055441 | AUTO VALUE MORA | SEWER FUND | SEWER COLLECTION | Repair/Maint - Bldg & | RETURN BRAKE RPR PARTS | -\$77.98 |
| 055441 | AUTO VALUE MORA | SEWER FUND | SEWER COLLECTION | Repair/Maint - Bldg & | VACTOR WIRING RPR PARTS | \$42.24 |
| CHECK # 055441 AUTO VALUE MORA | | | | | | \$350.93 |
| CHECK # 055442 B & B TRANSFORMER | | | | | | |
| 055442 | B & B TRANSFORMER | ELECTRIC FUN | | Fixed Assets | 3 PH XFRMR FOR COBORNS EL | \$5,445.28 |
| CHECK # 055442 B & B TRANSFORMER | | | | | | \$5,445.28 |
| CHECK # 055443 BEAUDRY PROPANE | | | | | | |
| 055443 | BEAUDRY PROPANE | ELECTRIC FUN | GENERATION & PO | Landfill Gen Exp | LFG OIL | \$3,191.25 |
| 055443 | BEAUDRY PROPANE | SEWER FUND | WASTEWATER TREA | Motor Fuels | DIESEL FUEL FOR TANK | \$416.70 |
| CHECK # 055443 BEAUDRY PROPANE | | | | | | \$3,607.95 |
| CHECK # 055445 BORDER STATES ELECTRIC | | | | | | |
| 055445 | BORDER STATES ELECT | ELECTRIC FUN | | Fixed Assets | METERING CT FOR ELECTRIC | \$386.24 |
| 055445 | BORDER STATES ELECT | ELECTRIC FUN | ELECTRIC DISTRIBU | Maint of St. Lights & S | FOREST AVE STR LIGHT FIXTU | \$1,699.75 |
| 055445 | BORDER STATES ELECT | ELECTRIC FUN | ELECTRIC DISTRIBU | Maint of Meters | METERING CT'S | \$647.00 |
| CHECK # 055445 BORDER STATES ELECTRIC | | | | | | \$2,732.99 |
| CHECK # 055448 CAMPBELL KNUTSON, P.A. | | | | | | |
| 055448 | CAMPBELL KNUTSON, P. | ELECTRIC FUN | ELECTRIC ADMINIST | Legal Services | MISC LEGAL-COLD WEATHER | \$1,138.00 |
| CHECK # 055448 CAMPBELL KNUTSON, P.A. | | | | | | \$1,138.00 |
| CHECK # 055449 CINTAS | | | | | | |
| 055449 | CINTAS | ELECTRIC FUN | GENERATION & PO | Other Operating Suppl | MATS, MOPS | \$52.82 |
| CHECK # 055449 CINTAS | | | | | | \$52.82 |
| CHECK # 055450 CORE & MAIN LP | | | | | | |
| 055450 | CORE & MAIN LP | WATER FUND | WATER DISTRIBUTI | Repair/Maint - Bldg & | MAIN VALVE RUBBER URETHA | \$81.11 |
| CHECK # 055450 CORE & MAIN LP | | | | | | \$81.11 |
| CHECK # 055452 DGR ENGINEERING | | | | | | |
| 055452 | DGR ENGINEERING | ELECTRIC FUN | ELECTRIC DISTRIBU | Engineering | ELECTRIC DISTR UNDERBUILD | \$2,037.00 |
| 055452 | DGR ENGINEERING | ELECTRIC FUN | ELECTRIC ADMINIST | Professional Services - | ELECTRIC SYSTEM STUDY | \$3,848.00 |
| CHECK # 055452 DGR ENGINEERING | | | | | | \$5,885.00 |
| CHECK # 055455 FERGUSON WATERWORKS | | | | | | |
| 055455 | FERGUSON WATERWOR | WATER FUND | | Inventory Materials/S | 12 WATER METERS | \$1,675.89 |
| 055455 | FERGUSON WATERWOR | WATER FUND | WATER DISTRIBUTI | Small Tools & Equipm | WATER VALVE WRENCH & EXT | \$1,637.46 |
| 055455 | FERGUSON WATERWOR | WATER FUND | WATER DISTRIBUTI | Repair/Maint - Bldg & | HYDRANT RPR PARTS | \$408.39 |
| CHECK # 055455 FERGUSON WATERWORKS | | | | | | \$3,721.74 |
| CHECK # 055457 FREEDOM MAILING SERVICES INC | | | | | | |
| 055457 | FREEDOM MAILING SER | ELECTRIC FUN | ELECTRIC ADMINIST | Cust UB/Collection | BILL PROCESSING | \$459.43 |
| 055457 | FREEDOM MAILING SER | ELECTRIC FUN | ELECTRIC ADMINIST | Energy Conservation | HOLIDAY LIGHTING INSERTS | \$26.98 |
| 055457 | FREEDOM MAILING SER | WATER FUND | WATER ADMINISTR | Cust UB/Collection | BILL PROCESSING | \$229.72 |
| 055457 | FREEDOM MAILING SER | SEWER FUND | SEWER ADMINISTR | Cust UB/Collection | BILL PROCESSING | \$229.72 |
| CHECK # 055457 FREEDOM MAILING SERVICES INC | | | | | | \$945.85 |
| CHECK # 055458 GLENS TIRE OPERATIONS INC | | | | | | |

**CITY OF MORA
CHECK LIST-PUC**

| CHECK # | Search Name | Fund Descr | Dept Descr | Last Dim Descr | Comments | Amount |
|--|---------------------|--------------|-------------------|-------------------------|----------------------------|------------|
| 055458 | GLENS TIRE OPERATIO | ELECTRIC FUN | GENERATION & PO | Repair/Maint - Bldg & | TORPEDO HEATER TIRE TUBE | \$9.00 |
| 055458 | GLENS TIRE OPERATIO | ELECTRIC FUN | ELECTRIC DISTRIBU | Truck Expense | CHEV 2500 TIRES | \$589.08 |
| CHECK # 055458 GLENS TIRE OPERATIONS INC | | | | | | \$598.08 |
| CHECK # 055459 GOPHER STATE ONE-CALL INC | | | | | | |
| 055459 | GOPHER STATE ONE-CA | ELECTRIC FUN | ELECTRIC DISTRIBU | Professional Services - | OCT LOCATES | \$30.38 |
| 055459 | GOPHER STATE ONE-CA | WATER FUND | WATER DISTRIBUTI | Professional Services - | OCT LOCATES | \$30.37 |
| 055459 | GOPHER STATE ONE-CA | SEWER FUND | SEWER COLLECTION | Professional Services - | OCT LOCATES | \$30.38 |
| CHECK # 055459 GOPHER STATE ONE-CALL INC | | | | | | \$91.13 |
| CHECK # 055460 GRAINGER, INC | | | | | | |
| 055460 | GRAINGER, INC | ELECTRIC FUN | GENERATION & PO | Other Operating Suppl | LIGHTBULBS | \$156.72 |
| 055460 | GRAINGER, INC | ELECTRIC FUN | ELECTRIC DISTRIBU | Small Tools & Equipm | PHASE TESTER | \$210.00 |
| 055460 | GRAINGER, INC | ELECTRIC FUN | ELECTRIC DISTRIBU | Misc Distribution Exp | SEALANT | \$41.15 |
| 055460 | GRAINGER, INC | ELECTRIC FUN | ELECTRIC DISTRIBU | Small Tools & Equipm | WIRE MEASURING TOOL | \$39.25 |
| CHECK # 055460 GRAINGER, INC | | | | | | \$447.12 |
| CHECK # 055463 GRANITE WATER WORKS INC | | | | | | |
| 055463 | GRANITE WATER WORK | WATER FUND | WATER DISTRIBUTI | Repair/Maint - Bldg & | CURB BOX LIDS, RODS, & BUS | \$422.00 |
| 055463 | GRANITE WATER WORK | SEWER FUND | SEWER COLLECTION | Repair/Maint - Bldg & | SEWER PLUG | \$38.70 |
| CHECK # 055463 GRANITE WATER WORKS INC | | | | | | \$460.70 |
| CHECK # 055464 HAWKINS, INC | | | | | | |
| 055464 | HAWKINS, INC | WATER FUND | WATER TREATMENT | Other Operating Suppl | SIDEWALK SALT | \$264.06 |
| 055464 | HAWKINS, INC | SEWER FUND | WASTEWATER TREA | Other Operating Suppl | SIDEWALK SALT | \$264.06 |
| 055464 | HAWKINS, INC | SEWER FUND | WASTEWATER TREA | Repair/Maint - Bldg & | PUMP PARTS | \$256.09 |
| CHECK # 055464 HAWKINS, INC | | | | | | \$784.21 |
| CHECK # 055465 IRBY TOOL & SAFETY | | | | | | |
| 055465 | IRBY TOOL & SAFETY | ELECTRIC FUN | ELECTRIC DISTRIBU | Misc Distribution Exp | BUCKET TRUCK GROUNDING R | \$1,435.46 |
| 055465 | IRBY TOOL & SAFETY | ELECTRIC FUN | ELECTRIC DISTRIBU | Misc Distribution Exp | GROUNDING CLUSTER BAG | \$65.00 |
| 055465 | IRBY TOOL & SAFETY | ELECTRIC FUN | ELECTRIC DISTRIBU | Professional Services - | GLOVE TESTING | \$61.89 |
| CHECK # 055465 IRBY TOOL & SAFETY | | | | | | \$1,562.35 |
| CHECK # 055467 JEFFS MACHINE & WELDING LLC | | | | | | |
| 055467 | JEFFS MACHINE & WEL | WATER FUND | WATER DISTRIBUTI | Repair/Maint - Bldg & | HYDRANT TOOL RPR | \$18.12 |
| CHECK # 055467 JEFFS MACHINE & WELDING LLC | | | | | | \$18.12 |
| CHECK # 055468 JOHNSONS HARDWARE & RENTAL | | | | | | |
| 055468 | JOHNSONS HARDWARE | ELECTRIC FUN | GENERATION & PO | Landfill Gen Exp | EXTENSION BAR & SOCKET DR | \$13.98 |
| 055468 | JOHNSONS HARDWARE | ELECTRIC FUN | GENERATION & PO | Repair/Maint - Bldg & | PROPANE CYLINDER | \$7.98 |
| 055468 | JOHNSONS HARDWARE | SEWER FUND | SEWER COLLECTION | Repair/Maint - Bldg & | MORA MARINE SEWER FITTIN | \$18.99 |
| CHECK # 055468 JOHNSONS HARDWARE & RENTAL | | | | | | \$40.95 |
| CHECK # 055469 KADLEC EXCAVATING | | | | | | |
| 055469 | KADLEC EXCAVATING | SEWER FUND | SEWER LIFT STATIO | Repair/Maint - Bldg & | BACKHOE - LIFT STATION | \$715.00 |
| CHECK # 055469 KADLEC EXCAVATING | | | | | | \$715.00 |
| CHECK # 055471 KANABEC PUBLICATIONS, INC | | | | | | |
| 055471 | KANABEC PUBLICATION | ELECTRIC FUN | ELECTRIC ADMINIST | Advertising | PH ON PROPOSED SPEC ASSM | \$30.75 |
| 055471 | KANABEC PUBLICATION | WATER FUND | WATER ADMINISTR | Advertising | PH ON PROPOSED SPEC ASSM | \$15.38 |
| 055471 | KANABEC PUBLICATION | SEWER FUND | SEWER ADMINISTR | Advertising | PH ON PROPOSED SPEC ASSM | \$15.38 |
| CHECK # 055471 KANABEC PUBLICATIONS, INC | | | | | | \$61.51 |
| CHECK # 055472 KODIAK POWER SYSTEMS, INC | | | | | | |
| 055472 | KODIAK POWER SYSTE | WATER FUND | WATER TREATMENT | Repair/Maint - Bldg & | FALL 2020 GENERATOR INSPE | \$390.00 |

**CITY OF MORA
CHECK LIST-PUC**

| CHECK # | Search Name | Fund Descr | Dept Descr | Last Dim Descr | Comments | Amount |
|---|----------------------|--------------|-------------------|-----------------------|-----------------------------|------------|
| 055472 | KODIAK POWER SYSTE | SEWER FUND | QUAMBA COLLECTI | Repair/Maint - Bldg & | FALL 2020 GENERATOR INSPE | \$390.00 |
| 055472 | KODIAK POWER SYSTE | SEWER FUND | SEWER LIFT STATIO | Repair/Maint - Bldg & | FALL 2020 GENERATOR INSPE | \$780.00 |
| 055472 | KODIAK POWER SYSTE | SEWER FUND | WASTEWATER TREA | Repair/Maint - Bldg & | FALL 2020 GENERATOR INSPE | \$390.00 |
| CHECK # 055472 KODIAK POWER SYSTEMS, INC | | | | | | \$1,950.00 |
| CHECK # 055474 KWIK TRIP - GAS PURCHASES | | | | | | |
| 055474 | KWIK TRIP - GAS PURC | ELECTRIC FUN | GENERATION & PO | Landfill Gen Exp | FUEL | \$29.72 |
| 055474 | KWIK TRIP - GAS PURC | ELECTRIC FUN | ELECTRIC DISTRIBU | Truck Expense | FUEL | \$241.61 |
| 055474 | KWIK TRIP - GAS PURC | WATER FUND | WATER DISTRIBUTI | Motor Fuels | FUEL | \$145.12 |
| 055474 | KWIK TRIP - GAS PURC | SEWER FUND | SEWER COLLECTION | Motor Fuels | FUEL | \$350.75 |
| 055474 | KWIK TRIP - GAS PURC | SEWER FUND | WASTEWATER TREA | Motor Fuels | FUEL | \$12.07 |
| CHECK # 055474 KWIK TRIP - GAS PURCHASES | | | | | | \$779.27 |
| CHECK # 055475 MARTENS FARM INC | | | | | | |
| 055475 | MARTENS FARM INC | SEWER FUND | WASTEWATER TREA | Repair/Maint - Bldg & | BIOSOLIDS HAULING | \$3,903.00 |
| CHECK # 055475 MARTENS FARM INC | | | | | | \$3,903.00 |
| CHECK # 055481 MN ENERGY RESOURCES CORP | | | | | | |
| 055481 | MN ENERGY RESOURCE | ELECTRIC FUN | GENERATION & PO | Generation Exp | NATURAL GAS | \$55.93 |
| 055481 | MN ENERGY RESOURCE | ELECTRIC FUN | GENERATION & PO | Natural Gas - Heat | NATURAL GAS | \$593.16 |
| 055481 | MN ENERGY RESOURCE | WATER FUND | WATER SUPPLY | Natural Gas - Heat | NATURAL GAS | \$48.39 |
| 055481 | MN ENERGY RESOURCE | WATER FUND | WATER TREATMENT | Natural Gas - Heat | NATURAL GAS | \$95.03 |
| 055481 | MN ENERGY RESOURCE | SEWER FUND | WASTEWATER TREA | Natural Gas - Heat | NATURAL GAS | \$171.41 |
| CHECK # 055481 MN ENERGY RESOURCES CORP | | | | | | \$963.92 |
| CHECK # 055483 NORTHERN SAFETY & INDUSTRIAL | | | | | | |
| 055483 | NORTHERN SAFETY & I | ELECTRIC FUN | GENERATION & PO | Other Operating Suppl | DISPOSABLE SHOP TOWELS | \$196.17 |
| CHECK # 055483 NORTHERN SAFETY & INDUSTRIAL | | | | | | \$196.17 |
| CHECK # 055484 NORTHERN STATES SUPPLY | | | | | | |
| 055484 | NORTHERN STATES SUP | ELECTRIC FUN | GENERATION & PO | Small Tools & Equipm | 18V BATTERY PACK FOR TOOL | \$115.95 |
| CHECK # 055484 NORTHERN STATES SUPPLY | | | | | | \$115.95 |
| CHECK # 055485 OAK GALLERY & FRAME SHOP | | | | | | |
| 055485 | OAK GALLERY & FRAME | ELECTRIC FUN | ELECTRIC DISTRIBU | Postage | SHIPPED GLOVES FOR TESTIN | \$52.29 |
| CHECK # 055485 OAK GALLERY & FRAME SHOP | | | | | | \$52.29 |
| CHECK # 055486 OFFICE DEPOT | | | | | | |
| 055486 | OFFICE DEPOT | ELECTRIC FUN | ELECTRIC ADMINIST | Other Operating Suppl | TP & PAPER TOWELS | \$13.72 |
| 055486 | OFFICE DEPOT | ELECTRIC FUN | ELECTRIC ADMINIST | Office Supplies | OFFICE SUPPLIES | \$79.22 |
| 055486 | OFFICE DEPOT | ELECTRIC FUN | ELECTRIC ADMINIST | Other Operating Suppl | CHAIRMATS & WRIST WREST | \$102.40 |
| 055486 | OFFICE DEPOT | WATER FUND | WATER ADMINISTR | Office Supplies | OFFICE SUPPLIES | \$4.43 |
| 055486 | OFFICE DEPOT | WATER FUND | WATER ADMINISTR | Other Operating Suppl | CHAIRMATS & WRIST WREST | \$51.22 |
| 055486 | OFFICE DEPOT | SEWER FUND | SEWER ADMINISTR | Office Supplies | OFFICE SUPPLIES | \$4.43 |
| 055486 | OFFICE DEPOT | SEWER FUND | SEWER ADMINISTR | Other Operating Suppl | CHAIRMATS & WRIST WREST | \$51.22 |
| CHECK # 055486 OFFICE DEPOT | | | | | | \$306.64 |
| CHECK # 055487 OSLIN LUMBER | | | | | | |
| 055487 | OSLIN LUMBER | SEWER FUND | SEWER LIFT STATIO | Repair/Maint - Bldg & | LIFT ST ELECT PANEL INSTALL | \$23.47 |
| CHECK # 055487 OSLIN LUMBER | | | | | | \$23.47 |
| CHECK # 055488 OWENS AUTO PARTS | | | | | | |
| 055488 | OWENS AUTO PARTS | ELECTRIC FUN | ELECTRIC DISTRIBU | Truck Expense | BELT PARTS, LUBE SPIN ONS, | \$90.94 |
| 055488 | OWENS AUTO PARTS | ELECTRIC FUN | ELECTRIC DISTRIBU | Truck Expense | RETURNED AIR FLOW SENSOR | -\$71.65 |
| 055488 | OWENS AUTO PARTS | WATER FUND | WATER DISTRIBUTI | Repair/Maint - Bldg & | TRUCK FILTERS | \$6.83 |
| 055488 | OWENS AUTO PARTS | SEWER FUND | SEWER COLLECTION | Repair/Maint - Bldg & | TRUCK FILTERS | \$314.46 |



MORA MUNICIPAL UTILITIES
PUBLIC UTILITIES COMMISSION CHECK LIST

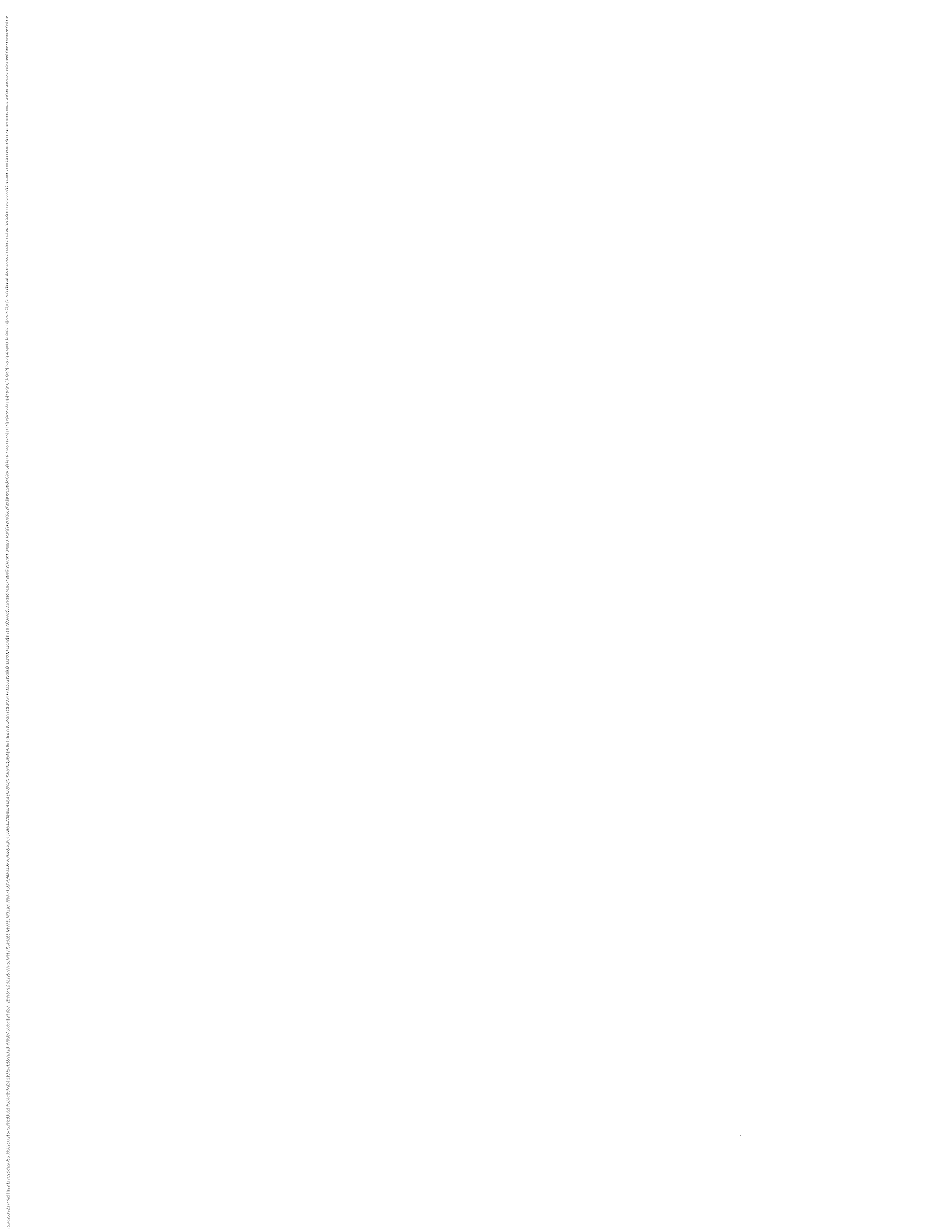
THE OCTOBER 2020 CLAIMS HAVE BEEN APPROVED FOR PAYMENT BY:

CHAIRMAN

COMMISSION MEMBER

COMMISSION MEMBER

SECRETARY





MEMORANDUM

Date: November 16, 2020
To: Public Utilities Commission
From: Sara King, Accountant
RE: Proposed Assessment of Unpaid Utility Bills

SUMMARY

The attached list of unpaid utility bills represent past-due homeowner and/or business owner accounts. If approved by the Public Utility Commission of Mora, these amounts will then be presented to Mora City Council on November 17, 2020 for consideration to certify unpaid charges to the respective property tax statements for taxes payable in 2021.

BACKGROUND INFORMATION

In accordance with Minnesota state law and Mora City Code § 50.24, property owners have been notified of the pending certification and have the right to attend the public hearing to object to the certification of the unpaid bill.

For the purpose of certifying unpaid utility accounts, it is the practice of Mora Municipal Utilities to review past due accounts bi-annually.

OPTIONS & IMPACTS

- A. Recommend to Mora City Council the certification of the entire list of unpaid charges
- B. Recommend to Mora City Council the certification of a partial list of unpaid charges
- C. Do not recommend certifications

RECOMMENDATIONS

Motion to recommend the certification of the entire list of unpaid charges to Mora City Council.

Attachments

Pending Assessment Roll for Unpaid Utility Charges

CITY OF MORA/MORA MUNICIPAL UTILITIES

PROPOSED SPECIAL ASSESSMENTS FOR UNPAID UTILITY CHARGES

For the Public Hearing on November 16, 2020 at 3:00 pm

| Parcel ID | Service Address | Balance | 10% Cert Fee | To Certify | Full Billing Name |
|--|------------------------|-----------|--------------|------------|-------------------------------------|
| 22.01385.00 | 600 BEAN AVE | 733.63 | 73.36 | 806.99 | BURK, KATHERINE L |
| 22.00365.00 | 724 HWY 65 N | 558.00 | 55.80 | 613.80 | JABAS, JENNIFER |
| 22.05940.00 | EDGEWOOD MH PARK ELECT | 1,089.48 | 108.95 | 1,198.43 | MORA ACQUISITIONS LLC/EDGEWOOD PARK |
| 22.05940.00 | EDGEWOOD MH PARK WATER | 15,914.44 | 1,591.44 | 17,505.88 | MORA ACQUISITIONS LLC/EDGEWOOD PARK |
| 22.08310.00 | 18445 MCCARTY CT | 696.00 | 69.60 | 765.60 | RODENBORG, BETH |
| 22.05665.00 | 610 CAROL AVE | 2,771.31 | 277.13 | 3,048.44 | WALBERG, KATHRYN A |
| 22.07820.00 | 1009 NELSON AVE | 1,046.68 | 104.67 | 1,151.35 | WELLER-HARRIS, ALISA |
| 22.00365.00 | 724 HWY 65 N | 730.85 | 73.09 | 803.94 | JABAS, JENNIFER |
| 22.05960.00 | 174 1ST ST SE | 250.63 | 25.06 | 275.69 | REGGUINTI, JESSICA |
| TOTAL UTILITY SPECIAL ASSESSMENTS | | 23,791.02 | 2,379.10 | 26,170.12 | |



MEMORANDUM

Date: November 16, 2020
To: Public Utilities Commission
From: Lindy Crawford, Public Utilities General Manager
RE: 2021 Salary Schedules/ Pay Plan

SUMMARY

The PUC reviews and adopt salary schedules and pay plans annually setting forth pay rates for all current employees.

BACKGROUND INFORMATION

The salary schedules reflect a 3% COLA increase for 2021 based on collective bargaining agreements previously approved by the PUC. The pay plans show the actual pay for each employee throughout the year, which includes COLA and step increases.

OPTIONS & IMPACTS

All salary schedules and pay plans are within the proposed budgets for 2021.

RECOMMENDATIONS

Motion to adopt the consolidated salary schedule and pay plan as presented.

Attachments

2021 Proposed Salary Schedules
2021 Pay Plan

CITY OF MORA/MORA MUNICIPAL UTILITIES
Consolidated Salary Schedule
2021

For All Employees
Except Fire Department & Aquatic Center

Hourly Rate

| Grade | Step A | Step B | Step C | Step D | Step E | Step F | Step G | Step H | Step I | Step J |
|-------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|
| 1 | 12.39 | 12.70 | 13.02 | 13.35 | 13.68 | 14.02 | 14.36 | 14.73 | 15.11 | 15.48 |
| 2 | 13.68 | 14.01 | 14.36 | 14.72 | 15.10 | 15.47 | 15.87 | 16.26 | 16.67 | 17.06 |
| 3 | 14.73 | 15.11 | 15.48 | 15.87 | 16.27 | 16.67 | 17.08 | 17.50 | 17.93 | 18.41 |
| 4 | 16.42 | 16.84 | 17.26 | 17.69 | 18.14 | 18.58 | 19.04 | 19.53 | 19.99 | 20.51 |
| 5 | 18.45 | 18.91 | 19.37 | 19.86 | 20.35 | 20.85 | 21.38 | 21.92 | 22.46 | 23.03 |
| 6 | 20.24 | 20.74 | 21.26 | 21.78 | 22.32 | 22.89 | 23.46 | 24.05 | 24.65 | 25.27 |
| 7 | 21.73 | 22.28 | 22.84 | 23.41 | 23.98 | 24.58 | 25.20 | 25.83 | 26.48 | 27.12 |
| 8 | 23.58 | 24.16 | 24.77 | 25.39 | 26.03 | 26.68 | 27.35 | 28.04 | 28.74 | 29.45 |
| 8.5 | 24.71 | 25.33 | 25.96 | 26.60 | 27.27 | 27.95 | 28.65 | 29.37 | 30.10 | 30.86 |
| 9 | 25.81 | 26.46 | 27.11 | 27.79 | 28.48 | 29.20 | 29.93 | 30.68 | 31.47 | 32.23 |
| 9.5 | 26.63 | 27.30 | 27.96 | 28.66 | 29.38 | 30.11 | 30.87 | 31.63 | 32.42 | 33.25 |
| 10 | 27.69 | 28.39 | 29.10 | 29.84 | 30.58 | 31.34 | 32.14 | 32.94 | 33.77 | 34.62 |
| 11 | 30.64 | 31.42 | 32.19 | 32.98 | 33.81 | 34.66 | 35.52 | 36.41 | 37.32 | 38.25 |
| 12 | 33.12 | 33.94 | 34.78 | 35.66 | 36.57 | 37.47 | 38.42 | 39.37 | 40.36 | 41.36 |
| 13 | 35.40 | 36.28 | 37.19 | 38.11 | 39.07 | 40.05 | 41.06 | 42.08 | 43.12 | 44.21 |
| 14 | 38.26 | 39.41 | 40.60 | 41.82 | 43.05 | 44.35 | 45.70 | 47.05 | 48.47 | 49.92 |
| 15 | 41.70 | 43.05 | 44.47 | 45.91 | 47.41 | 48.95 | 50.53 | 52.18 | 53.86 | 55.61 |
| 16 | 45.73 | 47.33 | 48.99 | 50.70 | 52.47 | 54.30 | 56.21 | 58.17 | 60.22 | 62.32 |

Annual Rate

| Grade | Step A | Step B | Step C | Step D | Step E | Step F | Step G | Step H | Step I | Step J |
|-------|--------|--------|---------|---------|---------|---------|---------|---------|---------|---------|
| 1 | 25,771 | 26,416 | 27,082 | 27,768 | 28,454 | 29,162 | 29,869 | 30,638 | 31,429 | 32,198 |
| 2 | 28,454 | 29,141 | 29,869 | 30,618 | 31,408 | 32,178 | 33,010 | 33,821 | 34,674 | 35,485 |
| 3 | 30,638 | 31,429 | 32,198 | 33,010 | 33,842 | 34,674 | 35,526 | 36,400 | 37,294 | 38,293 |
| 4 | 34,154 | 35,027 | 35,901 | 36,795 | 37,731 | 38,646 | 39,603 | 40,622 | 41,579 | 42,661 |
| 5 | 38,376 | 39,333 | 40,290 | 41,309 | 42,328 | 43,368 | 44,470 | 45,594 | 46,717 | 47,902 |
| 6 | 42,099 | 43,139 | 44,221 | 45,302 | 46,426 | 47,611 | 48,797 | 50,024 | 51,272 | 52,562 |
| 7 | 45,198 | 46,342 | 47,507 | 48,693 | 49,878 | 51,126 | 52,416 | 53,726 | 55,078 | 56,410 |
| 8 | 49,046 | 50,253 | 51,522 | 52,811 | 54,142 | 55,494 | 56,888 | 58,323 | 59,779 | 61,256 |
| 8.5 | 51,397 | 52,686 | 53,997 | 55,328 | 56,722 | 58,136 | 59,592 | 61,090 | 62,608 | 64,189 |
| 9 | 53,685 | 55,037 | 56,389 | 57,803 | 59,238 | 60,736 | 62,254 | 63,814 | 65,458 | 67,038 |
| 9.5 | 55,390 | 56,784 | 58,157 | 59,613 | 61,110 | 62,629 | 64,210 | 65,790 | 67,434 | 69,160 |
| 10 | 57,595 | 59,051 | 60,528 | 62,067 | 63,606 | 65,187 | 66,851 | 68,515 | 70,242 | 72,010 |
| 11 | 63,731 | 65,354 | 66,955 | 68,598 | 70,325 | 72,093 | 73,882 | 75,733 | 77,626 | 79,560 |
| 12 | 68,890 | 70,595 | 72,342 | 74,173 | 76,066 | 77,938 | 79,914 | 81,890 | 83,949 | 86,029 |
| 13 | 73,632 | 75,462 | 77,355 | 79,269 | 81,266 | 83,304 | 85,405 | 87,526 | 89,690 | 91,957 |
| 14 | 79,581 | 81,973 | 84,448 | 86,986 | 89,544 | 92,248 | 95,056 | 97,864 | 100,818 | 103,834 |
| 15 | 86,736 | 89,544 | 92,498 | 95,493 | 98,613 | 101,816 | 105,102 | 108,534 | 112,029 | 115,669 |
| 16 | 95,118 | 98,446 | 101,899 | 105,456 | 109,138 | 112,944 | 116,917 | 120,994 | 125,258 | 129,626 |

COLA increase over prior year: 3.00%

Certified adopted by the council on _____ & commission on _____.

By: _____

CITY OF MORA/MORA MUNICIPAL UTILITIES
Consolidated Salary Schedule
2021

Grade Assignments

1.0 Summer Maintenance Worker

2.0 Liquor Store Clerk II

5.0 Janitor

Winter Maintenance Worker

Water/Wastewater Maintenance Worker

6.0 Liquor Store Clerk I (Lead)

Utility Billing Clerk II

Water/Wastewater Operator III (Training)

7.0 Aquatic Center Assistant Manager

Building Inspector

8.0 Accounting Clerk

Equipment Operator/Mechanic

Mechanic

Utility Billing Clerk I

8.5 Generator Operator/Mechanic II

Street Supervisor

Water/Wastewater Operator II

9.0 Activities & Recreation Coordinator

Liquor Store Assistant Manager

Public Works Assistant Superintendent

Water/Wastewater Operator I (Lead)

9.5 Generator Operator/Electrician

Generator Operator/Mechanic I (Lead)

Administrative Assistant

10.0 Accountant

Human Resources Coordinator

Liquor Store Manager

Street Supervisor

Water/Wastewater Supervisor

11.0 Building Official

Community Development Planner

Public Works Superintendent

Generator Operator/Master Electrician

Plant/Line Manager

12.0 City Clerk/Treasurer

Community Development Director

13.0 Public Works Director

15.0 City Administrator/Public Utilities

General Manager

**CITY OF MORA/MORA MUNICIPAL UTILITIES
CONSOLIDATED PAY PLAN
2021**

| Effective: 12/28/2020 | | | PRIOR | | | 2021 PAY PLAN | | | | | |
|-----------------------|---|------------|------------|-------|------------|---------------|-------|-------|-------|----------|-------|
| Department | Position | Effective | Grade-Step | Rate | Effective | Grade-Step | COLA | Step | Rate | Increase | |
| Name | Name | Date | | | Date | | 3.00% | | \$ | % | |
| Administration | 131 City Administrator | 5/16/2020 | 15-D | 44.57 | 12/28/2020 | 15-D | 1.34 | - | 45.91 | 1.34 | 3.01% |
| Administration | 131 City Administrator | 12/28/2020 | 15-D | 45.91 | 5/16/2021 | 15-E | - | 1.50 | 47.41 | 1.50 | 3.27% |
| Administration | 133 Admin Asst/Deputy Clerk | 3/27/2020 | 9.5-E | 28.52 | 12/28/2020 | 9.5-E | 0.86 | - | 29.38 | 0.86 | 3.02% |
| Administration | 133 Admin Asst/Deputy Clerk | 12/28/2020 | 9.5-E | 29.38 | 3/27/2021 | 9.5-F | - | 0.73 | 30.11 | 0.73 | 2.48% |
| Administration | 511 Activities & Recreation Coordinator | 5/22/2020 | 9-D | 26.98 | 12/28/2020 | 9-D | 0.81 | - | 27.79 | 0.81 | 3.00% |
| Administration | 511 Activities & Recreation Coordinator | 12/28/2020 | 9-D | 27.79 | 5/22/2021 | 9-E | - | 0.69 | 28.48 | 0.69 | 2.48% |
| Administration | 139 Janitor | 10/20/2020 | 5-D | 19.28 | 12/28/2020 | 5-D | 0.58 | - | 19.86 | 0.58 | 3.01% |
| Administration | 139 Janitor | 12/28/2020 | 5-D | 19.86 | 10/20/2021 | 5-E | - | 0.49 | 20.35 | 0.49 | 2.47% |
| Finance | 153 Accountant | 12/29/2020 | 10-E | 29.69 | 12/28/2020 | 10-E | 0.89 | - | 30.58 | 0.89 | 3.00% |
| Finance | 153 Accountant | 12/28/2020 | 10-E | 30.58 | 12/29/2020 | 10-F | - | 0.76 | 31.34 | 0.76 | 2.49% |
| Finance | 154 Accounting Clerk | 12/16/2019 | 8-J | 28.59 | 12/28/2020 | 8-J | 0.86 | - | 29.45 | 0.86 | 3.01% |
| Finance | 154 Accounting Clerk | 12/28/2020 | 8-J | 29.45 | 6/5/2021 | 8-J | - | - | 29.45 | - | 0.00% |
| Finance | 156 Utility Billing Clerk I | 12/16/2020 | 8-C | 24.05 | 12/28/2020 | 8-C | 0.72 | - | 24.77 | 0.72 | 2.99% |
| Finance | 156 Utility Billing Clerk I | 12/28/2020 | 8-C | 24.77 | 12/16/2021 | 8-D | - | 0.62 | 25.39 | 0.62 | 2.50% |
| Finance | 156 Utility Billing Clerk II | 9/21/2020 | 6-A | 19.65 | 12/28/2020 | 6-A | 0.59 | - | 20.24 | 0.59 | 3.00% |
| Finance | 156 Utility Billing Clerk II | 12/28/2020 | 6-A | 20.24 | 3/21/2021 | 6-B | - | 0.50 | 20.74 | 0.50 | 2.47% |
| Finance | 156 Utility Billing Clerk II | 3/21/2021 | 6-B | 20.74 | 9/21/2021 | 6-C | - | 0.52 | 21.26 | 0.52 | 2.51% |
| Public Works | 311 Public Works Director | 12/16/2019 | 13-J | 42.92 | 12/28/2020 | 13-J | 1.29 | - | 44.21 | 1.29 | 3.01% |
| Public Works | 311 Public Works Director | 12/28/2020 | 13-J | 44.21 | 4/27/2021 | 13-J | - | - | 44.21 | - | 0.00% |
| Public Works | 315 Plant/Line Manager | | | | 5/17/2021 | 11-D | - | 32.98 | 32.98 | 32.98 | |
| Public Works | 315 Plant/Line Manager | 5/17/2021 | 11-D | 32.98 | 11/17/2021 | 11-E | - | 0.83 | 33.81 | 0.83 | 2.52% |
| Public Works | 315 Equipment Operator/Mechanic | 11/5/2020 | 8-D | 24.65 | 12/28/2020 | 8-D | 0.74 | - | 25.39 | 0.74 | 3.00% |
| Public Works | 315 Equipment Operator/Mechanic | 12/28/2020 | 8-D | 25.39 | 11/5/2021 | 8-E | - | 0.64 | 26.03 | 0.64 | 2.52% |
| Public Works | 315 Equipment Operator/Mechanic | 12/16/2019 | 8-J | 28.59 | 12/28/2020 | 8-J | 0.86 | - | 29.45 | 0.86 | 3.01% |
| Public Works | 315 Equipment Operator/Mechanic | 12/28/2020 | 8-J | 29.45 | 1/2/2021 | 8-J | - | - | 29.45 | - | 0.00% |
| Public Works | 315 Equipment Operator/Mechanic | 1/2/2021 | 8-J | 28.59 | 12/28/2020 | 8-J | 0.86 | - | 29.45 | 0.86 | 3.01% |
| Public Works | 315 Equipment Operator/Mechanic | 12/28/2020 | 8-J | 29.45 | 1/2/2021 | 8-J | - | - | 29.45 | - | 0.00% |
| Public Works | 315 Equipment Operator/Mechanic | 1/29/2020 | 8-D | 24.65 | 12/28/2020 | 8-D | 0.74 | - | 25.39 | 0.74 | 3.00% |
| Public Works | 315 Equipment Operator/Mechanic | 12/28/2020 | 8-D | 25.39 | 1/29/2021 | 8-E | - | 0.64 | 26.03 | 0.64 | 2.52% |
| Public Works | 319 Summer Maintenance Worker | | 1-C | 12.64 | 12/16/2019 | 1-D | 0.38 | 0.33 | 13.35 | 0.71 | 5.62% |
| Public Works | 319 Summer Maintenance Worker | | 1-D | 12.96 | 12/16/2019 | 1-E | 0.39 | 0.33 | 13.68 | 0.72 | 5.56% |
| Public Works | 319 Summer Maintenance Worker | | 1-C | 12.64 | 12/16/2019 | 1-C | 0.38 | - | 13.02 | 0.38 | 3.01% |
| Public Works | 319 Summer Maintenance Worker | | 1-B | 12.33 | 12/16/2019 | 1-B | - | 0.37 | 12.70 | 0.37 | 3.00% |
| Public Works | 374 Water/Wastewater Operator I | 12/16/2019 | 9-J | 31.29 | 12/28/2020 | 9-J | 0.94 | - | 32.23 | 0.94 | 3.00% |
| Public Works | 374 Water/Wastewater Operator I | 12/28/2020 | 9-J | 32.23 | 11/18/2021 | 9-J | - | - | 32.23 | - | 0.00% |
| Public Works | 375 Water/Wastewater Operator II | 12/16/2019 | 8.5-J | 29.96 | 12/28/2020 | 8.5-J | 0.90 | - | 30.86 | 0.90 | 3.00% |
| Public Works | 375 Water/Wastewater Operator II | 12/28/2020 | 8.5-J | 30.86 | 1/30/2021 | 8.5-J | - | - | 30.86 | - | 0.00% |
| Public Works | 376 Water/Wastewater Operator III | 12/18/2018 | 6-G | 22.78 | 12/28/2020 | 6-G | 0.68 | - | 23.46 | 0.68 | 2.99% |
| Public Works | 376 Water/Wastewater Operator III | 12/28/2020 | 6-G | 23.46 | 12/18/2021 | 6-H | - | 0.59 | 24.05 | 0.59 | 2.51% |
| Public Works | 378 Water/Wastewater Maintenance Worker | 5/21/2020 | 5-D | 19.28 | 12/28/2020 | 5-D | 0.58 | - | 19.86 | 0.58 | 3.01% |
| Public Works | 378 Water/Wastewater Maintenance Worker | 12/28/2020 | 5-D | 19.86 | 5/21/2021 | 5-E | - | 0.49 | 20.35 | 0.49 | 2.47% |
| Public Works | 389 Generator Operator/Electrician | 4/17/2020 | 11-H | 35.35 | 12/28/2020 | 11-H | 1.06 | - | 36.41 | 1.06 | 3.00% |
| Public Works | 389 Generator Operator/Electrician | 12/28/2020 | 11-H | 36.41 | 4/17/2021 | 11-I | - | 0.91 | 37.32 | 0.91 | 2.50% |
| Public Works | 387 Generator Operator/Mechanic I | 12/16/2019 | 9.5-J | 32.28 | 12/28/2020 | 9.5-J | 0.97 | - | 33.25 | 0.97 | 3.00% |
| Public Works | 387 Generator Operator/Mechanic I | 12/28/2020 | 9.5-J | 33.25 | 4/28/2021 | 9.5-J | - | - | 33.25 | - | 0.00% |
| Public Works | 388 Generator Operator/Mechanic II | 12/16/2019 | 8.5-J | 29.96 | 12/28/2020 | 8.5-J | 0.90 | - | 30.86 | 0.90 | 3.00% |
| Public Works | 388 Generator Operator/Mechanic II | 12/28/2020 | 8.5-J | 30.86 | 10/16/2021 | 8.5-J | - | - | 30.86 | - | 0.00% |
| Aquatic Center | 512 Aquatic Center Assistant Manager | | 7-D | 22.73 | 12/28/2020 | 7-D | 0.68 | - | 23.41 | 0.68 | 2.99% |
| Aquatic Center | 512 Aquatic Center Assistant Manager | | 7-D | 22.73 | 12/28/2020 | 7-D | 0.68 | - | 23.41 | 0.68 | 2.99% |
| Liquor Store | 571 Liquor Store Manager | 9/9/2020 | 10-E | 29.69 | 12/28/2020 | 10-E | 0.89 | - | 30.58 | 0.89 | 3.00% |
| Liquor Store | 571 Liquor Store Manager | 12/28/2020 | 10-E | 30.58 | 3/9/2021 | 10-F | - | 0.76 | 31.34 | 0.76 | 2.49% |
| Liquor Store | 572 Liquor Store Asst Manager | 9/18/2020 | 9-C | 26.32 | 12/28/2020 | 9-C | 0.79 | - | 27.11 | 0.79 | 3.00% |
| Liquor Store | 572 Liquor Store Asst Manager | 12/28/2020 | 9-C | 27.11 | 3/18/2021 | 9-D | - | 0.68 | 27.79 | 0.68 | 2.51% |
| Liquor Store | 576 Liquor Store Clerk II | 11/4/2020 | 2-J | 16.56 | 12/28/2020 | 2-J | 0.50 | - | 17.06 | 0.50 | 3.02% |
| Liquor Store | 576 Liquor Store Clerk II | 12/28/2020 | 2-J | 17.06 | 11/4/2021 | 2-J | - | - | 17.06 | - | 0.00% |
| Liquor Store | 576 Liquor Store Clerk II | 7/2/2020 | 2-E | 14.66 | 12/28/2020 | 2-E | 0.44 | - | 15.10 | 0.44 | 3.00% |
| Liquor Store | 576 Liquor Store Clerk II | 12/28/2020 | 2-E | 15.10 | 7/2/2021 | 2-F | - | 0.37 | 15.47 | 0.37 | 2.45% |
| Liquor Store | 576 Liquor Store Clerk II | 3/7/2020 | 2-D | 14.29 | 12/28/2020 | 2-D | 0.43 | - | 14.72 | 0.43 | 3.01% |
| Liquor Store | 576 Liquor Store Clerk II | 12/28/2020 | 2-D | 14.72 | 3/7/2021 | 2-E | - | 0.38 | 15.10 | 0.38 | 2.58% |
| Liquor Store | 576 Liquor Store Clerk II | 7/2/2020 | 2-C | 13.94 | 12/28/2020 | 2-C | 0.42 | - | 14.36 | 0.42 | 3.01% |
| Liquor Store | 576 Liquor Store Clerk II | 12/28/2020 | 2-C | 14.36 | 1/4/2021 | 2-D | - | 0.36 | 14.72 | 0.36 | 2.51% |
| Liquor Store | 576 Liquor Store Clerk II | 9/15/2020 | 2-A | 13.28 | 12/28/2020 | 2-A | 0.40 | - | 13.68 | 0.40 | 3.01% |
| Liquor Store | 576 Liquor Store Clerk II | 12/28/2020 | 2-A | 13.68 | 3/15/2021 | 2-B | - | 0.33 | 14.01 | 0.33 | 2.41% |
| Liquor Store | 576 Liquor Store Clerk II | 3/15/2021 | 2-B | 14.01 | 9/15/2021 | 2-C | - | 0.35 | 14.36 | 0.35 | 2.50% |
| Liquor Store | 576 Liquor Store Clerk II | 7/8/2020 | 2-C | 13.94 | 12/28/2020 | 2-C | 0.42 | - | 14.36 | 0.42 | 3.01% |
| Liquor Store | 576 Liquor Store Clerk II | 12/28/2020 | 2-C | 14.36 | 7/8/2021 | 2-D | - | 0.36 | 14.72 | 0.36 | 2.51% |
| Liquor Store | 576 Liquor Store Clerk II | 3/21/2020 | 2-F | 15.02 | 12/28/2020 | 2-F | 0.45 | - | 15.47 | 0.45 | 3.00% |
| Liquor Store | 576 Liquor Store Clerk II | 12/28/2020 | 2-F | 15.47 | 3/21/2021 | 2-G | - | 0.40 | 15.87 | 0.40 | 2.58% |
| Liquor Store | 576 Liquor Store Clerk II | 7/3/2020 | 2-C | 13.94 | 12/28/2020 | 2-C | 0.42 | - | 14.36 | 0.42 | 3.01% |
| Liquor Store | 576 Liquor Store Clerk II | 12/28/2020 | 2-C | 14.36 | 7/3/2021 | 2-D | - | 0.36 | 14.72 | 0.36 | 2.51% |
| Community Development | 643 Planning & Comm. Devel. Director | 12/18/2020 | 12-J | 40.16 | 12/28/2020 | 12-J | 1.20 | - | 41.36 | 1.20 | 2.99% |
| Community Development | 643 Planning & Comm. Devel. Director | 12/28/2020 | 12-J | 41.36 | 12/18/2021 | 12-J | - | - | 41.36 | - | 0.00% |
| Community Development | 646 Building Official | 10/21/2020 | 11-B | 30.50 | 12/28/2020 | 11-B | 0.92 | - | 31.42 | 0.92 | 3.02% |
| Community Development | 646 Building Official | 12/28/2020 | 11-B | 31.42 | 1/21/2021 | 11-C | - | 0.77 | 32.19 | 0.77 | 2.45% |

Certified adopted by the council on
 ___/___/___ & commission on
 ___/___/___
 By: _____



MEMORANDUM

Date: November 16, 2020
To: Public Utilities Commission
From: Lindy Crawford, Public Utilities General Manager
RE: 2021 PUC Meeting Schedule

BACKGROUND INFORMATION

Traditionally the PUC meets at 3:00pm at City Hall on the Monday before the third Tuesday of the month. Staff recommends keeping with this meeting date in 2021. Below are proposed meeting dates which incorporate holidays and one joint meeting with the City Council.

January 19; this is the 3rd Tuesday – moved due to Dr. Martin Luther King, Jr. Day
February 16; this is the 3rd Tuesday – moved due to Presidents’ Day
March 15
April 19
May 17
June 14
July 20; this is the 3rd Tuesday.
July 20; 4:30pm joint meeting with City Council
August 16
September 20
October 18
November 15
December 20

RECOMMENDATIONS

Motion to approve the 2021 meeting dates as presented.

Attachments
None



MEMORANDUM

Date November 16, 2020
To Public Utilities Commission
From Lindy Crawford, Public Utilities General Manager
RE America's Water Infrastructure Act Risk & Resilience Assessment

SUMMARY

The PUC will consider a proposal from SEH to conduct a risk and resilience assessment and emergency response plan per America's Water Infrastructure Act (AWIA) requirements.

BACKGROUND INFORMATION

In October 2018 AWIA was signed into law and states that all water systems serving more than 3,300 people need to conduct risk and resilience assessments, and develop or update their emergency response plans no less than six months later. We must certify to the Environmental Protection Agency (EPA) that each are complete, failure to comply with this mandate can result in fines up to \$25,000 per day.

City Engineer Greg Anderson, SEH, will be present at the meeting to discuss the proposal and any questions the PUC may have.

OPTIONS & IMPACTS

Completing a risk and resilience assessment is required and must be completed by June 30, 2021, and the emergency response plan is due within six months of the risk and resilience assessment certification.

RECOMMENDATIONS

Motion to accept the AWIA Risk and Resilience Assessment and Emergency Response Plan proposal from SEH in the amount not to exceed \$15,500.

Attachments

Proposal and AWIA Information from SEH



Building a Better World
for All of Us®

November 2, 2020

RE: City of Mora, MN
AWIA Risk and Resilience Assessment
and Emergency Response Plan
SEH No. MORA0 103688 14.00

Lindy Crawford
City Administrator/Public Utilities General Manager
City of Mora
101 Lake Street
Mora, MN 55051

Dear Lindy:

On October 23, 2018 the America's Water Infrastructure Act (AWIA) was signed into law. Under this law community water systems with a population greater than 3,300 people must develop or update risk and resilience assessments (RRAs) and emergency response plans (ERPs). With the population served by Mora's water system, the RRA is due by June 30, 2021, and the ERP is due within six months of RRA certification. With these two dates fast approaching, the City needs to start planning to meet those dates.

Short Elliott Hendrickson Inc. (SEH®) has met with City staff to discuss this work and better understand their goals and desired outcomes from this work. Transmitted herewith is our proposal for professional engineering services for the work of developing the Utility's Risk and Resilience Assessment and Emergency Response Plan.

BACKGROUND

The City has an existing Vulnerability Assessment and Emergency Response Plan that was required under the Bioterrorism Act of 2002, but under the Bioterrorism Act, the threat focus was on terrorism and other malevolent threats. Under AWIA, it is required to take an all-hazards approach when developing RRAs, the new vulnerability assessment, and ERPs. Specifically, to be in compliance with AWIA, the City is required to create an RRA and ERP that meet the following requirements.

Risk and Resilience Assessments shall include:

- Risks to the water system from malevolent acts, natural disasters, and other hazards.
- Resilience of the water system's critical assets such as wells, treatment processes, and computer systems.
- An assessment of the monitoring practices of the system.
- An assessment of the City's financial infrastructure such as the cybersecurity of the computer systems for payroll and customer billing.
- A review of how the system uses, stores, and handles various chemicals.
- A review of the systems operation and maintenance procedures.

Emergency Response Plans shall include:

- Strategies and resources to improve the resilience of the system.

Engineers | Architects | Planners | Scientists

Short Elliott Hendrickson Inc., 3535 Vadnais Center Drive, St. Paul, MN 55110-3507

SEH is 100% employee-owned | sehinc.com | 651.490.2000 | 800.325.2055 | 888.908.8166 fax

- Plans and procedures to implement during emergencies.
- Actions, procedures, and equipment that can be used to prevent or lessen the severity of an emergency.
- Strategies and equipment to be used to prevent emergencies.

PROPOSED PROJECT

For this project, SEH proposes to perform a risk and resilience analysis of the City's drinking water system. Following this work, SEH will work with the City to evaluate the risks identified and develop mitigation strategies for risks deemed unacceptable to the City. After the RRA work has been completed and certified, SEH will develop a new ERP using the following:

- Results of the RRA efforts including risk mitigation strategies developed with City staff,
- Knowledge from the existing sources such as the City's Wellhead Protection Plan, sanitary surveys, and Comprehensive Plan, and
- Thoughts and ideas learned through interviews with City Staff.

Following the completion and certification of these efforts, the City will be in compliance with AWIA's requirements.

PROJECT SCOPE

For this proposal, SEH proposes to perform the following three (3) basic tasks as listed below:

Task No. 1 – Project Initialization and Data Collection

- Project setup
 - Develop and sign the contract for the scope of work.
 - Create the project in the SEH accounting system.
- Meeting No. 1 – Kick-off meeting with City staff
 - Confirm and establish scope and goals of the project.
 - Identify infrastructure to be assessed during the RRA.
 - Identify information and/or materials that are needed or will be useful to conduct the RRA.
- Meeting No. 2 – Tour City's existing facilities, and interview Utility Services staff
 - Inventory and review of the City's critical water assets.
 - Inventory and review of the City's existing protection measures for their critical assets.
 - Gather input from City Utility Services staff on any perceived or real threats to Utility's critical assets.
 - Review the City's SOPs, daily operations, and monitoring procedures. This would include things such as sampling schedules, and inspection procedures.

Task No. 2 – Risk and Resilience Assessment

- Conduct Risk and Resilience Assessment using the AWWA J100 Standard for Risk and Resilience Management of Water and Wastewater Systems process.
- Work with City staff to develop standard operating procedures and mitigation measures for risks identified through the RRA.
- Meeting No. 3 – RRA Analysis & Risk Mitigation Development
 - SEH will present the results of the RRA and work with the City to assess identified risks and discuss mitigation measures for risks deemed unacceptable.

- Submit draft RRA Results & Technical Memorandum to Owner’s project team.
- Incorporate Owner’s comments into the technical memorandum and deliver hard copies.
- Assist the City in the EPA’s certification process of the RRA.

Task No. 3 – Emergency Response Plan

- Develop an ERP which shall include:
 - Existing information such as relevant mitigation measures, contact information, inventory, and relevant information from the City’s Wellhead Protection Plan, sanitary surveys, Comprehensive Plan, etc.
 - New strategies, resources, plans, and procedures deemed necessary during the Risk and Resilience Assessment to reduce the City’s existing risks.
- Meeting No. 4 – Present draft ERP to Owner’s team.
- Incorporate Owner’s comments into the ERP and deliver hard copies.
- Assist the City in the EPA’s certification process of the ERP.

DELIVERABLES

Project deliverables, also defined in the Task descriptions above, include:

1. Electronic and three (3) hard copies of the final RRA Technical Memorandum summarizing the work of Task No. 2 – Risk and Resilience Assessment. Reimbursement for printing is included in the proposed pricing.
2. Electronic and three (3) hard copies of the final ERP developed in Task No. 3 – Emergency Response Plan. Reimbursement for printing is included in the proposed pricing.

PROJECT SCHEDULE

We estimate the project to follow the schedule below:

- Contract and Project Setup November 2020
- Background Document Review & Data Collection December 2020
- Conduct RRA..... December – February 2021
- Submit Draft RRA Tech. Memo to City’s Team..... February 2021
- Finalize RRA Technical Memorandum March 2021
- Submit RRA Certification..... March 2021
- Develop ERP April 2021
- Submit Draft ERP to City’s Team Early May 2021
- Finalize ERP Late May 2021
- Submit ERP Certification Late May 2021

CONSULTANT STAFF

Simon McCormack, PE has completed AWWA’s Utility Risk & Resilience Certificate Program and will be responsible for developing the RRA and ERP, writing the RRA Technical Memorandum and ERP, and assisting with the EPA’s certification process. I will serve as the project manager for this Project and will be responsible for coordinating the overall work efforts for the project and in attendance at key project progress meetings.

COMPENSATION

Compensation for the services identified in the scope of work will be made on an hourly basis plus cost of reimbursable expenses. Total compensation will not exceed \$15,500 without prior authorization. The estimated breakdown of the task budgets is generally described below:

| Task | Budget |
|--|-----------------|
| Task No. 1 – Project Initialization & Data Collection Fees | \$4,000 |
| Task No. 2 – Risk and Resilience Assessment Fees | \$5,000 |
| Task No. 3 – Emergency Response Plan Fees | \$4,000 |
| Total Compensation | \$13,000 |

Remarks

You agree to furnish us with full information as to your requirements, including any special or extraordinary considerations for the Project or special services needed, and also to make available all pertinent existing information and data that we will need to perform our services.

We will also furnish such Additional Services as you may request or as required.


This *Letter Proposal* represents the entire understanding between The City of Mora (Owner) and Short Elliot Hendrickson Inc. (Consultant) in respect of the Project outlined above. If it satisfactorily sets forth your understanding of our Agreement, please sign the attached Agreement and return it to me.

CLOSURE

We want to thank you for the opportunity to provide the City of Mora with this proposal. As always, it is very important to us our services continue to meet and surpass your needs and expectations. After you have had an opportunity to review this proposal, we would like to hear any comments, concerns or questions you may have. If this proposal is acceptable, please sign and return a copy of this proposal letter, authorizing us to proceed with the project.

Sincerely,

SHORT ELLIOTT HENDRICKSON INC.



Greg F. Anderson, PE
City Engineer
(Lic. MN)

ah

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AMERICA'S WATER INFRASTRUCTURE ACT

Start Planning Today!

Facts and Figures

America's Water Infrastructure Act (AWIA) states that all water systems serving more than 3,300 people need to conduct risk and resilience assessments, and develop or update their emergency response plans no less than six months later.

You must certify to the Environmental Protection Agency (EPA) that each are complete.

Failure to comply with this mandate can result in fines up to \$25,000 per day.



Risk and Resilience Assessment – Well House Example

| Critical Asset | Well House | | |
|--------------------------------|-------------------------------|---------------------------|--|
| Threat | Damaged by Tornado | Run into by Vehicle | SCADA System Compromised |
| Consequence | Repair Cost = \$500,000 | Repair Cost = \$50,000 | Regain Access Cost = \$100,000 |
| Vulnerability | 1.0 | 1.0 | 0.9 |
| Threat Likelihood | .001 | .11 | .003 |
| Risk and Resilience Analysis | Risk = \$500/yr | Risk = \$5,500/yr | Risk = \$270/yr |
| Risk and Resilience Management | Strengthen building structure | Place barrier around well | Invest in SCADA system cyber security and restrict access to users |

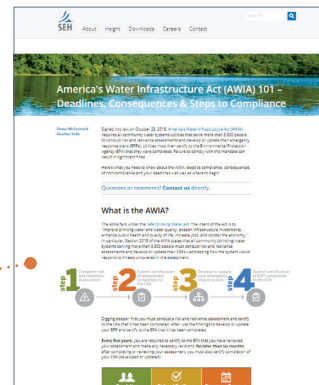
At SEH, we rely on the American Water Works Association's J100 Standard seven step process when undertaking risk and resilience assessments.

Unsure where to begin? We're here to help.

We are familiar with all types of water systems. We understand the AWIA and EPA requirements, and are proficient in making sure you remain in compliance.

Please contact us with questions, to learn more about the AWIA, or to get started on the process. You can also learn more at sehinc.com/insight, including:

AWIA 101 – Deadlines, Consequences & Steps to Compliance



Contact

Simon McCormack, PE (MN) | Drinking Water Professional | smccormack@sehinc.com | 800.325.2055

SEH | 3535 Vadnais Center Drive, St. Paul, MN 55110-5196



MEMORANDUM

Date November 16, 2020
To Public Utilities Commission
From Lindy Crawford, Public Utilities General Manager
RE WWTP Project Contract Discussion

SUMMARY

The PUC will review and discuss the progress and status of the establishment of reeds at the Wastewater Treatment Plant (WWTP).

BACKGROUND INFORMATION

Please see the attached letters from CWG, Gridor and SEH for ample background information. Steve Lee, Gridor Construction, and Greg Anderson, SEH, will be in attendance at the meeting to participate in the discussion.

OPTIONS & IMPACTS

1. Gridor and CWG are requesting the project be closed out and a final payment be issued.
 - a. They say that if final payment is made, CWG will make two more visits to the plant to review and comment on the reed growth. By closing out the project, we have no guarantee that CWG will make two more visits as there would be no contractual obligation.
 - b. Staff has previously requested a definition of “establishment” from Gridor. What is the basis for determining if the reeds are fully established? If simply looking with the naked eye for coverage is the determination, then the reeds are not fully (100%) established at this time.

2. Staff strongly recommends that the reeds be reviewed again next summer, and a drone be utilized to map the reed growth. At that time, a determination of establishment can be made assuming establishment is determined by looking for coverage.
 - a. This is in line with what the MPCA and U of M suggested at their site visit.

RECOMMENDATIONS

Review and discuss all correspondence, and direct staff appropriately.

Attachments

- CWG Letter, October 9, 2020
- Gridor Letter & Attachments, November 4, 2020
- SEH Letter, November 12, 2020

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Group

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Boynton Beach, FL 33473

info@reedbed.com

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866.599.2714 toll-free
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October 9, 2020

Dear City Council Members,

We write to address your decision to withhold \$20,000 representing the final payment to Gridor Construction, which is now overdue. This we understand comes at the recommendation of Greg Anderson, the Mora City Engineer, and Lindy Crawford, the City Manager. As you know, because of our contractual arrangement with Gridor on this project, CWG is directly and adversely impacted by this decision. For the reasons discussed below, CWG does not accept this position and strongly disagrees with Mr. Anderson and Ms. Crawford's recommendation.

CWG has met and exceeded all obligations and deliverables as set forth in its sub-contract Agreement with Gridor Construction. These include, but are not limited to, the following:

- Planting of the native reed *P. australis americanus* during the fall of 2015. This was done prior to the Mora Wastewater Treatment Facility's completion and, therefore, no biosolids were available to apply to the reed beds. At that time, under no contractual obligation but as a sign of our commitment to the success of the project, CWG contributed to the cost of the Curlex III wood fiber blankets to protect the reed root structure over the winter, in the absence of biosolids.
- Providing written and verbal instructions to the City and its General Contractor, Gridor Construction, on recommended winter protocols following the reed planting.
- Providing written and verbal instructions including an Operation & Maintenance Guideline, and numerous follow-up phone calls and emails to the City's wastewater treatment operators and Gridor Construction regarding the recommended watering requirements for the initial growing season (spring 2016).
- Completing an on-site visit to the Mora WWTF on May 16, 2016.



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Present at the May 16, 2016 meeting were Scott Davis, Steve Rose, Joe Kohlgraf, Rodney Knudsen, and Ken Mattson. At the time of this visit, we observed the condition of the reeds and the current watering system, which had not been set up as we had specified and was operating on a limited basis over the prior few weeks. This grossly inadequate irrigation system was in direct violation of the requirements set forth in our addendum to our sub-contract agreement and clearly presented in our O & M guideline and follow-up written communications. While CWG could have voided the guarantee of the reeds at this time, in the spirit of good will and cooperation, we chose to exceed the scope of our contractual obligations to ensure the success of the partnership. These efforts ultimately resulted in healthy and established reed beds. The following is a timeline of key events:

- Commencing in June 2016 the Mora facility, at the recommendation of CWG, began to apply biosolids to the reed beds.
- From the onset of our involvement, it became quickly apparent that the digester capacity—previously established at the site without the input or approval of CWG—did not provide adequate retention time to reduce the volatile solids to CWG’s recommended limit of 70% as clearly stated in our O & M Guidelines and numerous written correspondence with the wastewater treatment plant operators. As CWG has made clear on numerous occasions, continued application of biosolids with volatile percentage above 70% compromises the efficacy of the reed bed system and compromises the conditions for optimum reed establishment and growth.
- In addition, CWG immediately identified that the surface area of the reed beds—also developed at the site without CWG’s input or approval—was inadequate for the volume of biosolids the facility sought to apply. As CWG has explained on numerous occasions, this results in oversaturation, another factor known to hinder the healthy establishment and growth of the reeds.



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- Primarily as a result of these design flaws and operational deficiencies, all of which are counter to CWG's recommendations and outlined protocols and parameters, healthy reed growth was predictably slower than optimal at the facility. To help address these challenges, CWG over the past three years has completed three additional plantings within the four reed beds.
- The reed beds were in a saturated condition following the winter of 2018/19, as a result of application of poorly stabilized biosolids (volatile solids well above the recommended 70%) As previously stated, these conditions inhibit reed emergence and growth due to oxygen deprivation of the root structure.
- The Mora operators began strictly adhering to a reduced hydraulic application rate and loading *interval*, with minimal application to the reed beds during the winter of 2019/20 and this entire growing season. (2020).
- This has resulted in a robust and healthy establishment of the native reeds throughout all four reed beds. As is to be expected, the maturity of the reeds varies to some degree from bed to bed, but all four are unquestionably well-established at this time.

Throughout this time, CWG has gone above and beyond in its services to ensure a successful partnership and project. We have also expressed that we are willing to provide two additional site visits at our own cost in January of 2021 and in the spring of 2021 once the reeds emerge to support the continued success at the facility. In over 40 years of business, we have always taken this approach and have seen all of our engagements through to their successful completion. It is our sincere hope that this project will be no different.

However, CWG will not be able to continue our work until payment, which is now overdue, is promptly made. As outlined above, it is our strong belief that CWG's work has exceeded our contractual





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obligations and that any decision to withhold or delay payment is not justified. To the extent this decision is based on a determination by the Mora City Engineer that the reed beds are still not established, based on extensive expertise in this regard, we adamantly refute that determination and would be happy to explain in further detail over the phone, should such an explanation be required.

Please advise immediately as to your decision regarding the overdue payment. Unfortunately, if not resolved in an expedient fashion, CWG will have no choice but to consider the legal remedies available to it.

We thank you for your prompt attention to this matter and look forward to continuing our partnership.

Sincerely,



Handwritten signature of Jennifer Greene in black ink.

Jennifer Greene
Principal

Handwritten signature of Scott Davis in black ink.

Scott Davis
Principal





GRIDOR CONSTR., INC.

3990 27th Ave SE
Buffalo, MN 55313

(763) 559-3734
(Fax) 559-3736

Improving America's Water Quality since 1970

November 3, 2020

City of Mora, MN
101 Lake Street South
Mora, MN 55051

Attn: Lindy Crawford - City Administrator / Public Utilities General Manager

RE: Mora, MN Reed Bed Status

Ms. Crawford,

We have been discussing for quite some time the closeout of the Mora, MN WWTF project. We have been discussing the establishment of the reed beds and specifically the reed plants themselves. I would like to formally request this letter and my attachments to be put on the Mora PUC meeting for 11/16/20, and provide us a time slot where we can openly discuss these documents with the PUC.

During this meeting, I would like to discuss these 5 attachments to hopefully give us all bigger picture of what is going on here with the reeds. We have not closed this project out because we cannot agree that the reed plant stock has been established (31 23 23.3.10.D.3). We have made significant progress this year to establish the reeds, but we believe there are major concerns with the WWTF operations and long-term viability of the reed beds.

This has been very challenging for everyone and this is something Gridor had very little control over. We did not get to pick the plant type that was planted, but rather were tied to a plant supplier / plant stock supplier (that we were led to believe is the only one in the country). But more importantly, Gridor also has no control over what is fed to the reed beds. As you are aware, our contract is very specific (31 23 23.3.10.D.1) that sludge containing greater than 70% volatile solids shall not be applied to the reed beds. This was specified in the contract because solids with >70% volatile solids make it very difficult for plant life to occur, and specifically sustaining these types of reeds. The CWG O&M which is attached and was submitted and approved specifically states this very clearly.

I will not deny we have had issues communicating with and getting responses from CWG, the reed bed stock supplier. Now they have become frustrated and have written a letter to the city as well (this is also attached). Their concerns are the same as Gridor's; constantly feeding solids with volatiles over 70% and the long-term health of the reed beds with this type of operation.

I have studied the information you provided me for what has been applied to the reed beds. You can see a trend in 2020 where we agree we have made significant progress; but the plant operations are not applying anywhere near what the design intention was, while still consistently applying well over 70% volatiles (2020 Average is 75.5%). With the volatiles being sent to the reed beds, CWG and Gridor are not confident you will ever be able to send the intended amount of sludge to these beds or maintain a healthy stock of reeds. More succinctly, the WWTF needs to address the aerobic digester operations or this issue will continue to be a problem.

We agree that if we wait until next summer, the reeds may be in a better and more established position. However, we cannot guarantee this, nor meet contractual obligations, if the City does not provide the reeds with a contractually obligated sludge (<70% volatile solids). Furthermore, we are very concerned that if the feed stock continues, the established reeds could be damaged, which not only puts the City in an operational bind, but it could add financial exposure to the City for the circumstances. This is a large concern that needs to be addressed at your wastewater plant.

CWG has asked for final payment, and have offered to provide 2 more trips to the plant if they receive payment. I would like to formally request final payment on this project so we can have them continue to help us. If we do not pay them, I am not sure where this goes. Thus, why I am formally requesting to meet with the PUC to discuss these options to help close this out.

It has never been my intention to not close this project out and I really want to help, but we have concerns both short and long term as well as contractually on what your wastewater plant can and cannot do for these reed beds.

Please let me know if we can put this topic on the agenda to openly discuss and hopefully come to a resolution and or a plan.

Sincerely



Steve Lee
Project Manager
Gridor Constr., Inc.

CC: Greg Anderson, PE, SEH

Attachments: (5 ea) Spec section 31 23 23 (Soil Drying Reed Beds); Plan Sheet GP (Basis of Design);
Email dated 11/2/20 with data on what has been applied to reed beds; CWG O&M Manual;
CWG letter to City

SECTION 31 23 23
SOIL DRYING REED BEDS

PART 1 GENERAL

1.01 SUMMARY

- A. Section Includes:
1. Filter material;
 2. PVC liner;
 3. PVC drain pipe and fittings; and
 4. Furnishing and maintaining reeds.
- B. Related Sections:
1. Section 03 30 00 - Cast in Place Concrete
 2. Section 31 23 10 - Excavation and Embankment
 3. Section 31 23 16 - Structure Excavations and Backfills
 4. Section 33 44 20 - Manholes and Catch Basins
 5. Section 40 23 10 - Process Water and Waste Piping
 6. Section 40 23 30 - Process Piping Valves

1.02 QUALITY ASSURANCE

- A. Prior to delivery of the synthetic liner to the job site, supply the Engineer with manufacturer certified test results, showing that the liner made from each new batch of raw material meets all specification requirements.
- B. Take a minimum of three random samples from liner rolls shipped to the site. An independent testing laboratory, paid for by the Contractor, shall test these samples for thickness, elongation, and tensile properties. Report test results to the Engineer and Owner in writing. Re-testing required because of non-conformance to specified requirements shall be performed by the same independent testing laboratory at the Contractor's expense.
- C. Mark pipe, fittings, and valves. Marking shall meet the requirements of the applicable specification or standard.
- D. Contractor performing reed planting shall have a minimum of 5 years of previous experience with growing and planting emergent aquatic or wetland plants in natural or artificial environments and sludge drying reed beds.

1.03 SUBMITTALS

- A. Submit under Provisions of Section 01 33 00.
- B. Submit written planting and maintenance plan.
- C. Submit all liner test results on seam strength, strength of liner material, mil thickness, etc.
- D. Submit contractor and liner manufacturer's certification that the liner was installed per plans and specifications upon completion.
- E. Submit Contractor's and Liner Manufacturer's Certification that the aggregate and sand cover material was placed per plans and specifications upon completion.
- F. Submit liner manufacturer's certification that the installation was in conformance with all warranty provisions and that no provisions of the warranty have been voided upon completion.
- G. Submit a manufacturer's statement to the Engineer prior to delivery of the liner material that:
1. The manufacturer's representative has made a visual inspection of the construction site.

- C. Groundwater control and removal are incidental work. If it becomes necessary to dewater, the dewatering shall be free of visible turbidity and shall be discharged in a manner not to cause erosion (See Sections 01 57 12 and 01 57 19).

1.06 WARRANTY

- A. The liner supplier shall warrant that their liner being supplied to the Owner will limit leakage to less than 500 gallons per day per acre of reed bed surface at 8 feet water depth over the liner and free draining subgrade under the liner for a period of five years. Provide liner system warranty and/or performance bond that will cover all appropriate items that would cause the reed beds to leak beyond the 500 gal/acre/day leakage requirement, i.e. rocks, abrasion, settlement, seaming, construction technique, ice, etc.
- B. Provide warranty to cover labor and materials to fully repair the liner to within specified limits and remedy the problem. The coverage includes, but is not limited to, the detection of the leak, removal and replacement of the geotextile fabric, cover material, liner, subgrade, etc.
- C. Provide coverage of 20 years for liner materials, 5 years for liner material workmanship and 1 year for all liner remedial costs, commencing from the date of acceptance of the reed bed liner by the Owner.
- D. The liner warranty shall be in published form and shall apply to all similar work. A copy of each warranty shall be placed on file with the Owner and the Engineer prior to installation of the synthetic liner.

PART 2 PRODUCTS

2.01 SOIL STERILANT

- A. The soil sterilant for use on subsoil under synthetic liners if there is enough delay in operations to allow vegetation growth shall be a broad range, non-selective herbicide with 2, 6-dichlorobenzo-nitrate as the active ingredient.
- B. Application of soil sterilant shall be considered as incidental to the project.

2.02 SAND BEDDING

- A. Use well graded natural sand for the 6-inches of material under the plastic liner. Sand material shall be inorganic, free of all rocks, stones, sticks, and debris of any kind, with no particle larger than 3/8 inch diameter. Not more than 50 percent by weight of this material shall be between one-fourth and three-eighths inch diameter. Crushed material or material with sharp, abrasive, or irregular particles is unacceptable. The Contractor shall verify with the liner manufacturer that the proposed material meets all requirements of the liner. Furnish written certification to this effect.

2.03 PVC LINER

- A. Provide a PVC liner manufactured of new first quality raw materials. Recycling of manufactured PVC products and/or materials shall not occur. Additives may be used provided they do not interfere with the intended use of the product and are used according to the manufacturer's recommendations.
- B. Produce liner material as single homogeneous sheets free of holes, blisters, roughness, striations, and contamination by foreign matter, undispersed raw materials, or any other defect which may cause the liner to deviate from the minimum materials requirements. If such conditions are found to exist, the engineer has the option to reject the roll, or ask the material supplier to repair the defective area. Reject rolls where excessive damage or a repeating pattern of damage to the liner occurred.
- C. Supply liner material to the site in or on containers designed to prevent handling damage. Identify the thickness length, width, date of manufacture, lot number, deployment directions, and identify any additional information deemed necessary by the Engineer or manufacturer on packaging labels.
- D. PVC liner shall meet the requirements of the National Sanitation Foundation Standard No. 54.

2.05 2.07 FILTER AGGREGATE

- A. Each sludge drying reed bed shall be provided with a layer of fine and coarse filter aggregate above the liner and below the top sand layer.
- B. Aggregate shall consist of a high proportion of particles that are rounded and tend toward a generally spherical or equi-dimensional shell.
- C. Material shall possess sufficient strength and hardness to resist degradation during handling and use.
- D. Material shall be free of shale, mica, clay, sand, dirt, and organic impurities. The material shall also be free of crushed quarry rock, crushed concrete and salvaged bituminous mixture.
- E. Material shall conform to MnDOT Spec 3149 Type H Coarse Filter Aggregate, except as described below:
 - 1. Coarse Filter
 - a. 100% shall pass the 1-inch sieve;
 - b. 50 – 60% shall pass the 3/4-inch sieve;
 - c. 10-20% shall pass the 3/8-inch sieve; and
 - d. 0 – 10% shall pass the No. 4 sieve.
 - e. Material shall be non-angular and non-abrasive.
 - 2. Fine Filter Aggregate
 - a. 100% shall pass the 3/4-inch sieve;
 - b. 80-95% shall pass the 3/8-inch sieve; and
 - c. 0 – 10% shall pass the No. 4 sieve.
 - d. Material shall be non- angular and non-abrasive.
- F. A certified sieve analysis shall be provided prior to installation to confirm compliance with these specifications.
- G. Coarse aggregate around the perforated drain piping shall be placed by hand to avoid damage to the piping. Each layer shall be placed and leveled before the addition of the next layer is started.

2.06 SAND COVER

- A. Material shall consist of round durable particles of sand conforming to Mn/DOT Spec 3149, Type K Sand Cover except that:
 - 1. 100% shall pass the No. 10 sieve,
 - 2. 80-90% shall pass the No. 20 sieve,
 - 3. no more than 5 – 15% shall pass the No. 40 sieve; and
 - 4. 0 -3% shall pass the No. 200 sieve.
- B. Reeds are to be planted in this top layer of sand.
- C. A certified sieve analysis shall be provided prior to installation to confirm compliance with these specifications.

2.07 REEDS

- A. Provide common non-invasive reeds (*Phragmites americanus*).
- B. Provide sufficient quantity to cover entire surface of all reed beds.
- C. Provide plants for replacement of failing plants per paragraph 3.10.D.
- D. The Prime Contractor shall coordinate their work with the Reed Planting and Maintenance Subcontractor and verify that the sand cover and aggregate filter materials meet the requirements for planting and maintaining the reeds. Furnish written certification to this effect.

2.08 PVC DRAIN PIPING AND FITTINGS

- A. Perforated Pipe and Fittings

- D. Grade or roll the subgrade to provide a smooth flat surface for placing the liner to within (\pm)0.2 feet. No abrupt changes in grade shall occur such as vehicular ruts. However, slope the liner to avoid gas build up below the liner, as directed by the Engineer.
- E. Keep the subgrade free of standing water during placement of sand bedding, liner placing, and seaming. If subgrade below the liner becomes wet and unstable, dry and compact.
- F. If sufficient time elapses between grading operations and liner installation to allow weed growth, then apply soil sterilant. Make application as directed by herbicide manufacturer.
- G. Place 6-inch deep sand bedding upon competent subgrade. Compact sand bedding to 95% Standard Proctor Density. Roll sand bedding smooth.

3.02 LINER PLACEMENT

- A. Lay out liner panels according to Plans supplied by the manufacturer and no deviation should be allowed, except with approval of Engineer.
- B. Secure liner panels to the reed bed concrete walls using a stainless steel termination bar as detailed on the drawings. Silicone caulk shall be used in conjunction with closed-cell gasket material at liner stainless steel termination bar to help create a water tight liner system. Caulk must be suitable for outdoor installation in Minnesota climate.
- C. Overlap liner panels in accordance with manufacturer's recommendation. Overlap distance must be sufficient so that all seam tests can be performed as stated in the various test procedures.
- D. At no time during liner placement shall any vehicle be allowed directly on the exposed liner.
- E. Make pipe penetrations of liner watertight by a collar of liner material around pipe that is welded to liner. Secure collar to pipe with a stainless steel compression band. Only those panels that can be seamed and secured that day should be unpackaged and placed into position. Protect all loose panels from wind lift.
- F. All workers, inspectors and supervisors shall wear soft soled shoes.
- G. The synthetic liner shall be installed by a Contractor who has been regularly engaged in the installation of such liners, with a minimum of five (5) previous PVC liner installations of similar design.

3.03 LINER SEAMING

- A. Make welds for seaming panels of plastic liner according to Manufacturer's recommendations.
- B. Make seaming of PVC according to manufacturer's recommendations. Ambient temperatures for seaming should be in the range of 50 to 95 degrees F. Seaming should not occur on wet or damp PVC bonding areas. Clean interfaces of all dust and dirt.
- C. The type of adhesive and method of application should be according to the manufacturer recommendation.
- D. Following adhesive application, close seams immediately to prevent excessive solvent evaporation.
- E. Make any patches and repairs to the liner within 48 hours of discovery of the defect using techniques as recommended by the manufacturer.
- F. Patches should be made from the same material as the liner and have a continuous rounded edge with no distinct corners. There shall be a minimum overlap of three inches beyond damaged areas. In addition overlap distance and adhesive shall meet all previous seam requirements.
- G. Fish mouths shall not be allowed. A fish mouth is defined as an area in the seam where one liner panel is first folded over on itself and a second liner panel is placed and welded over this fold. Where fish mouths occur, the liner shall be cut, overlapped, and covered with a patch. All solvents or cleaning

- H. Non-destructive and destructive seam testing is to be performed and paid for by the Contractor. No additional compensation will be provided for re-testing and repair of faulty seams.

3.05 PRELIMINARY WATER BALANCE TEST

- A. After installation and anchorage of the liner a preliminary water balance will be conducted prior to backfilling with granular materials. The water balance will be conducted to a minimum water depth of 6- inches above the termination bars. The purpose of the preliminary water balance is to check for leaks while the liner is exposed to view.

3.06 AGGREGATE AND SAND COVER MATERIAL

- A. Place non-woven geotextile above liner prior to placement of the coarse aggregate layer. Place geotextile according to Plans supplied by the manufacturer. Secure geotextile to the reed bed concrete walls using a stainless steel termination bar as detailed on the drawings.
- B. Aggregate and sand cover materials shall be kept clean and stored separately from each other.
- C. The bottom layer of coarse aggregate shall be placed carefully to avoid damage to the liner and geotextile fabric. Carefully place coarse aggregate material by hand around the perforated drain system to avoid damage to the pipe.
- D. Each layer shall be completed before the layer above is started. Each layer shall be screeded to a true level plane. Care shall be exercised to avoid disturbing the layer below.

3.07 CERTIFICATION AND WARRANTY

- A. Upon completion of the covering operation, certify in writing to the Owner that all materials, equipment, and construction have been completed in conformance with the Plans and Specifications.
- B. Submit a record drawing to the Engineer showing liner seams, numbered test locations, and repairs/patches.
- C. Upon acceptance of the project, provide the Owner with a liner system warranty, which will cover all appropriate items that would cause the reed beds to leak beyond the 500 gal/acre/day at full reed bed depth, i.e., rocks, abrasion, settlement, seaming, construction technique, ice, etc. This warrant shall cover labor and materials to fully repair the liner and remedy the problem. This should include, but not be limited to, detection of the leak, removal and replacement of the liner cover material, geotextile fabric, liner, subgrade, etc. The warranty shall provide full coverage for five years.

3.08 PREFILLING

- A. Before prefilling the reed beds, the liner manufacturer and the Minnesota Pollution Control Agency must inspect the work and grant approval. The following must occur:
 1. The Contractor shall provide written certification to the Owner and Engineer that all material and workmanship for the synthetic liner have complied with plans and specifications.
 2. The Contractor will be responsible for the performance of the water balance test and data collection and shall be responsible for development of a water balance test plan for review and approval by the Owner, Engineer, and MPCA. The water balance test plan shall meet the requirements of the MPCA Prefill and Water Balance Criteria.
 3. The Owner will submit a letter indicating that they have accepted the work necessary to conduct the prefill and complete the water balance, and are requesting the MPCA to conduct a prefill inspection.
- B. Upon completion of the inspection, the contractor may proceed with filling the reed beds with water for the barrel test, unless notified otherwise by the Engineer.
- C. Install temporary plugs in lateral drain piping, if necessary, prior to prefilling.
- D. Contractor is responsible for furnishing the water used in the Preliminary Water Balance, Water Balance Testing, and reed establishment.

1. The Contractor may request the use of treated effluent for the preliminary water balance and water balance test. This request should be made in writing to the Owner and Engineer. The Owner will then request permission from the MPCA for use of effluent water for the water balance test. The Contractor shall be responsible for any fees or permits required to use treated effluent. The Contractor shall supply all equipment as required to pump the effluent water into the reed beds. Limit filling rate to six inches per day.

- E. Fill reed beds to a depth 2 feet above the top of the liner, measured at the high end of the reed beds.

3.09 WATER BALANCE

- A. Water Balance shall be conducted by the Minnesota Barrel method for a minimum period of 4 weeks. Barrel test shall be completed no later than November 15. Barrel tests shall not be started after October 15.
- B. Each reed bed shall be tested separately.
- C. Three assemblies of two 55-gallon barrels each (measuring 35 inches \pm 2 inches high, 22.5 inches \pm 1 inch diameter) for a total of six barrels shall be used in each reed bed for the water balance test. Each barrel assembly shall be placed on a concrete pad. Barrel assemblies shall be located in three corners of the pond such that the top of the barrels will be level and extend 12 inches and 15 inches above the water surface. Contractor shall survey the elevation of each concrete pad before and after the water balance test is completed.
- D. Rainfall shall be measured at the reed bed site utilizing a U.S. National weather service standing 8-inch precipitation gauge.
- E. Barrels will each be measured three times per week for a minimum of four weeks.
- F. Water levels in the barrels and reed beds shall be measured every weekday for a minimum of four weeks.
- G. Rainfall will be measured after each rain event.
- H. Each measurement shall be to the nearest millimeter.
- I. The Contractor shall measure the groundwater elevation during the water balance test. Contractor shall construct a piezometer near the reed beds. Contractor shall be responsible for removal of the piezometer following completion of the water balance test.
- J. A successful water balance test on the new reed beds in accordance with the requirements of the Water Balance Criteria of the MPCA is required for acceptance. The method of conducting the test and the details of the statistical analysis are included on the MPCA website. Contractor shall retain and pay for the services of an independent testing laboratory to conduct the water balance test. Submit test results to the Engineer for review.
- K. Pump the prefill and water balance test water back to the wastewater plant. The reed beds shall be drained at six inches per day. Any necessary repairs or adjustments shall be made after the reed beds have been drained of prefill water.

3.10 REED PLANTS

- A. Examination
 1. Until reed beds have first passed water balance testing, no reeds shall be installed.
 2. Verify that site conditions are acceptable to begin reed planting per reed supplier recommendations and perform corrective actions as required to maintain proper planting conditions.
 3. Notify Engineer of any items or conditions that do not appear suitable prior to planting, or of any changes in conditions during planting that may affect the integrity of plant stock.
 4. Beginning work constitutes acceptance of the site conditions.
- B. Protection

1. Conduct all operations in such manner as to limit disturbance of reed bed filter materials once plant stock has begun being installed. Provide protection from all sources, construction or otherwise, that may disturb filter material once plant stock has been installed.
2. Protect all existing structures, plantings, other facilities or natural or engineered features that are not scheduled for removal. Repair or replace any damage at the contractor's expense.

C. Construction Operations

1. Preparation of Filter Material
 - a. Filter material surface should be flat and free of debris and/or refuse prior to installation of plant stock.
2. Planting:
 - a. Plant reeds no more than 12 inches apart from adjacent reed plants.
 - b. Reeds shall be planted in a manner that is consistent with plant stock supplier's recommendations.
 - c. Foliage of installed plant stock shall be protected during planting to minimize incidental damage, and once planted shall be verified to be free of soil or other material which may be resting on foliage.

D. Establishment and Maintenance Period

1. Sludge containing greater than 70% volatile solids shall not be applied to sludge drying Fwared beds.
2. Contractor shall submit a written plan outlining reed bed planting and maintenance for Engineer approval. Planting shall not begin until Engineer approves written plan.
3. For a minimum of 2 months following the completion of all reed planting or as required by plant stock supplier, the Contractor shall return to the site to evaluate plant growth and provide the Owner instruction until the plant stock has been established. The plant stock supplier and engineer will determine what constitutes established stock. Inspection of plant stock shall be conducted by a competent reviewer who is knowledgeable in the establishment requirement of reeds for this application.
4. During this period, watering of plant stock is the responsibility of the contractor. Water volume and frequency is to be determined by the plant stock provider. Effluent water may be available based on Owner approval for use as irrigation, however conveyance of the water is the responsibility of the contractor. Costs associated with watering during this period is incidental to plant installation.
5. Provide plants and installation for replacement of nonconforming reed plant stock which cannot perform intended engineered functions because of maintenance, installation, product stock, or plant heartiness. Costs associated with plant replacement during this period are incidental to installation of plant stock.
6. Contractor shall identify problems and provide recommendations to rectify any problems observed.
7. Contractor shall furnish and plant new reeds to replace those that fail to grow during the establishment and maintenance growing period. This determination will be in conjunction with the site visit referenced above. Costs associated are considered incidental to the installation of plant stock.
8. Contractor shall summarize each site visit in writing and submit the written summary to the Engineer and Owner for each site visit within three days of the initial visit. Summary shall include an assessment of plant material, recommendations for maintenance prior to the next site visit, and corrective action taken since the last site visit.

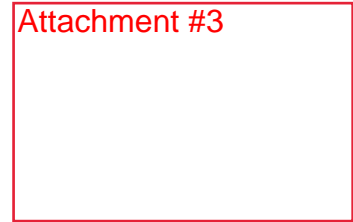
E. Owner Instructions

1. Contractor shall provide complete instruction to the Owner on the care of the reed plants. Instruction shall include, but not necessarily be limited to: nutrient requirements, pest identification and control, troubleshooting, and resolving other common problems.
2. Complete care instructions shall be provided in a written manual to the Engineer and Owner. Submit manual per Section 01 78 23.
3. Contractor shall be available for consultation by telephone as necessary.
4. Owner shall provide the normal day to day operation of the red beds following completion of the installation. Normal operation will be per Contractor's instructions and recommendations.

END OF SECTION

Steve Lee

From: Lindy Crawford <l.crawford@cityofmora.com>
Sent: Monday, November 02, 2020 10:43 AM
To: Steve Lee; Greg Anderson
Subject: RE: Mora Reed Beds
Attachments: Reed bed loading 2020.xlsx



Hi Steve,

See attached for the volatiles and loadings for the last couple of years. Thank you,

Lindy Crawford
City Administrator | Public Utilities General Manager
City of Mora | Mora Municipal Utilities
101 Lake Street South | Mora, MN 55051
Direct – 320.225.4806 | Cell – 320.515.0724
City Hall – 320.679.1511 | Fax – 320.679.3862



www.ci.mora.mn.us

From: Steve Lee [mailto:steve@gridor.com]
Sent: Thursday, October 29, 2020 10:43 AM
To: Lindy Crawford <l.crawford@cityofmora.com>; Greg Anderson <ganderson@sehinc.com>
Subject: Mora Reed Beds

Lindy
Can I please be provided information on how the reed beds were feed over the last couple of years? Assume that is all documented...then I can look at that myself.

Dates, application rates and what properties of the sludge were applied. I think they have logs of all this, they were providing CWG but I would like to have them too.

Thanks

Steve Lee

Project Manager
Gridor Constr., Inc.
3990 27th Street SE
Buffalo, MN 55313

Direct: (763) 746-9072
Fax: (763) 559-3736
Cell: (612) 210-3693
Email: steve@gridor.com

www.gridor.com

Reed Bed Records- Volatiles and percent solids

| Date | Solids | Volatile | Temp | Date | Application/cell |
|------------|--------|----------|--------|--------------|------------------|
| 5/23/2018 | 1.30% | 68.52% | | 12/1/2016 | 13 K |
| 6/8/2018 | 1.20% | 68.52% | | 12/23/2016 | 10 K |
| 6/20/2018 | 1.28% | 67.50% | | 1/13/2017 | 20 K |
| 6/21/2018 | 1.41% | 67.67% | | 2/3/2017 | 20 K |
| 6/26/2018 | 1.39% | 68.95% | | 2/22/2017 | 3 K |
| 6/29/2018 | 1.80% | 68.80% | | 3/3/2017 | 12 K |
| 7/3/2018 | 1.40% | 70.40% | | 3/24/2017 | 12 K |
| 7/5/2018 | 1.50% | 70% | | 4/13/2017 | 12 K |
| 7/11/2018 | 1.40% | 69.40% | | 5/2/2017 | 6 K |
| 8/7/2018 | 1.18% | 64.30% | | 5/5/2017 | 4 K |
| 8/27/2018 | 1.21% | 65.06% | | 5/16/2017 | 12 K |
| 9/10/2018 | 1.27% | 66.44% | | 6/1/2017 | 12 K |
| 9/18/2018 | 1.46% | 67.32% | | 6/16/2017 | 12 K |
| 9/27/2018 | 1.50% | 69.00% | | 6/29/2017 | 12 K |
| 10/1/2018 | 1.78% | 72% | | 7/13/2017 | 12 K |
| 10/4/2018 | 1.80% | 74% | | 7/27/2017 | 12 K |
| 10/8/2018 | 1.60% | 74% | | 8/11/2017 | 12 K |
| 11/14/2018 | 1.20% | 73% | | 8/25/2017 | 12 K |
| 11/20/2018 | 1.70% | 85% | | 9/8/2017 | 12 K |
| 12/20/2018 | 1.74% | 76.70% | | 9/22/2017 | 12 K |
| 1/9/2019 | 1.40% | 76% | 14.3 c | 10/12/2017 | 12 K |
| 1/25/2019 | 1.40% | 75% | 14 c | 10/26/2017 | 12 K |
| 2/5/2019 | 1.40% | 78% | 13 c | 11/9/2017 | 12 K |
| 4/2/2019 | 1.60% | 79% | 13.7 c | 11/21/2017 | 12 K |
| 4/3/2019 | 1.50% | 78% | 14 c | 12/1/2017 | 12 K |
| 4/9/2019 | 1.80% | 78% | 14.4 c | 12/4/2017 | 12 K |
| 4/10/2019 | 1.70% | 78% | | 12/21/2017 | 12 K |
| 4/26/2019 | 1.40% | 77% | 15.7 c | 1/5/2018 | 12 K |
| 5/5/2019 | 1.50% | 77% | 15.7 c | 1/19/2018 | 12 K |
| 5/22/2019 | 1.50% | 76% | | 2/1/2018 | 12 K |
| 5/28/2019 | 1.70% | 76% | 15.8 c | 2/12/2018 | 12 K |
| 6/25/2019 | 1.50% | 75.20% | | 3/2/2018 | 12 K |
| 7/16/2019 | 1.60% | 74.20% | | 3/16/2018 | 12 K |
| 8/7/2019 | 1.60% | 71.80% | | 3/29/2018 | 12 K |
| 8/12/2019 | 2.12% | 72% | 22.9 c | 4/6/2018 | 18 K |
| 8/20/2019 | 1.75% | 71% | 23.2 c | 4/27/2018 | 12 K |
| 8/22/2019 | 2% | 71% | 21.5 | 5/17/2018 | 12 K |
| 8/22/2019 | 1.50% | 71% | | 5/25/2018 | 12 K |
| 9/3/2019 | 2.31% | 71% | | 6/7/2018 | 12 K |
| 9/10/2019 | 1.78% | 70.80% | 22.6 c | 6/22/2018 | 12 K |
| 9/25/2019 | 2.02% | 70.40% | 19.7 c | 7/6/2018 | 12 K |
| 9/26/2019 | 2.10% | 71.80% | 20.8 c | 7/27/2018 | 12 K |
| 10/3/2019 | 2.14% | 69.80% | 19.3 c | 8/10/2018 | 12 K |
| 10/22/2019 | 1.80% | 71% | 21.1 c | 8/24/2018 | 12 K |
| 10/28/2019 | 1.80% | 70% | 20.6 c | 9/7/2018 | 12 K |
| 12/4/2019 | 1.49% | 72% | 17.2 c | 10/1/2018 | 12 K |
| 12/5/2019 | 1.51% | 72% | 16.6 c | 10/25/2018 | 12 K |
| 12/13/2019 | 1.60% | 72.80% | 15.5 c | 11/9/2018 | 15 K |
| 12/19/2019 | 1.60% | 73.11% | 15.2 c | 11/30/2018 | 12 K |
| 12/23/2019 | 1.10% | 63.90% | | no feed 2019 | |
| 1/2/2020 | 1.60% | 74% | | 7/24/2020 | 8 K |
| 1/7/2020 | 1.60% | 75% | | 8/7/2020 | 8 K |
| 1/8/2020 | 1.57% | 77% | | 8/28/2020 | 8 K |
| 1/14/2020 | 1.60% | 75% | | 9/18/2020 | 8 K |
| 1/15/2020 | 1.60% | 74.80% | | 10/2/2020 | 8 K |
| 1/29/2020 | 1.80% | 75.90% | | 10/16/2020 | 8 K |
| 2/12/2020 | 1.80% | 77.20% | | | |
| 2/19/2020 | 1.60% | 77.70% | | | |

2016 total = 23,000 per cell
92,000 gallons total

2017 total = 293,000 per cell
1,172,000 gallon total

2018 total = 273,000 per cell
1,092,000 gallons total

2019 - none

2020 total = 48,000 per cell
192,000 gallons total

| | | | |
|-----------|-------|--------|--------|
| 2/26/2020 | 1.73% | 78% | |
| 3/9/2020 | 2.72% | 77% | 15.3 c |
| 3/26/2020 | 2.20% | 76% | |
| 3/31/2020 | 1.80% | 76% | |
| 4/8/2020 | 1.80% | 76% | |
| 4/15/2020 | 1.90% | 76% | |
| 5/5/2020 | 1.80% | 77% | |
| 6/2/2020 | 1.70% | 78% | |
| 6/8/2020 | 2.18% | 76.90% | |
| 6/12/2020 | 2.08% | 77.60% | |
| 6/15/2020 | 1.74% | 77.20% | |
| 6/16/2020 | 0.99% | 75.67% | |
| 6/25/2020 | 1.60% | 76.71% | |
| 6/30/2020 | 1.81% | 76.67% | |
| 7/7/2020 | 1.80% | 75.49% | |
| 7/9/2020 | 1.60% | 77% | |
| 7/15/2020 | 1.80% | 75% | |
| 7/29/2020 | 1.50% | 75.20% | |
| 8/5/2020 | 1.60% | 74% | |
| 8/11/2020 | 1.70% | 74.50% | |
| 8/18/2020 | 1.60% | 73.60% | |
| 8/25/2020 | 1.40% | 73.30% | |
| 9/8/2020 | 1.36% | 72.22% | |
| 9/15/2020 | 1.22% | 72% | |
| 9/24/2020 | 1.22% | 73% | |
| 9/28/2020 | 1.70% | 74% | |
| 10/6/2020 | 1.40% | 73.50% | |



**O&M SUBMITTAL CHECKLIST
PHOSPHORUS IMPROVEMENTS PROJECT
SEH PROJECT NO: MORAO 132040**

Attachment #4

SUBMITTAL NO: PRELIMINARY OM 43-22-70-002
DESCRIPTION: REED BEDS
NUMBER RECEIVED: ELECTRONIC
DATE RECEIVED: 8-24-2015
DATE COMMENTS RETURNED: 9-8-2015
COMMENTS BY: NAJ

Modify submittal as indicated by checked items below

- Include name and phone number of manufacturer's local authorized representative.
- Include name and phone number of supplier or manufacturer.
- Include name and phone number of suppliers of specialized components and spare parts.
- Clearly indicate information specific to this installation.
- Cross out information not applicable to this installation.
- Fully describe installation, assembly, alignment and inspection procedures.
- Provide detailed description of unit & component parts, including suppliers & model numbers of buy out items.
- Describe function, normal operating conditions, and limiting conditions for equipment.
- Include performance curves and specific engineering data where specified.
 - Include certified selection/performance curves.
- Include manufacturer's parts lists, illustrations and assembly drawings in concise and legible format.
- Include "as installed" coded wiring diagrams.
- Include "as installed" control and logic diagrams.
- Include manufacturer's printed operation and maintenance diagrams.
- Include manufacturer's start-up, break-in, and normal operating instructions.
- Include servicing and lubrication schedule, with list of approved lubricants.
- Provide summer, winter, and any other specialized operating and maintenance instructions.
- Include detailed trouble shooting guide.
- List items and quantities recommended to be stocked as spare parts.
- Include instructions for periodic aligning, adjusting, and balancing of equipment.
- Furnish final edition hard copies bound in 3 ring binder, vinyl covered, with index tabs as required and appropriate identification on cover and spine of binder.**
- Include warranty.

COMMENTS: Please provide items checked above.

S:\KOMMMora0\132040\7-const-svcs\77-o-m\Reed Beds\Sub# - OM Checklist - Title.docx

Mora WWTF Phosphorus Improvements Project

Submittal Number: 31 23 23-0004-00
 Title: Reed Bed O&M



101 Lake Street South
 Mora MN 55051

Project ID:
 Owner: City of Mora
 Construction Team: Gridor Constr., Inc.
 Design Team: SEH Inc.

Date Due: 09/14/2015
 Date Issued: 08/24/2015
 Date Returned: 09/08/2015
 Substitution: No
 Review Status: Furnish As Corrected

Information

Types: O&M Manuals
 Trades: N/A
 Categories: N/A
 Subcontractor/Manufacturer: CWG

Stamps

| | |
|--|---|
| <input type="checkbox"/> REVIEWED | Review does not extend to quantities, dimensions, fabrication processes, construction means or methods, coordination of the work or safety procedures. Comments or corrections made do not relieve Contractor from compliance with the drawings and specifications. |
| <input type="checkbox"/> FURNISH AS NOTED | |
| <input type="checkbox"/> REVISE AND RESUBMIT | In resubmitting, identify revisions made. |
| <input type="checkbox"/> REJECTED | |

Review of this submittal is expressly limited as provided in the Contract Documents and is only to determine compliance with information given in the Contract Documents and conformance with the design concept of the completed project. Review does not affect contract price or time.

Short Elliott Hendrickson Inc.

By: Noah Johr Date: 09/08/2015

Gridor Constr., Inc. represents that we have determined and verified all field dimensions and measurements, field construction criteria, materials, catalog numbers, and similar data, and that we have checked with the requirements for the Work and the Contract Documents as stipulated in General Conditions.

Transmittal No: _____

Approved By: Steve Lee

Date: _____

Mora WWTF Phosphorus Improvements Project
 31 23 23-0004-00
 Reed Bed O&M

Project: Mora WWTF Phosphorus Improvements Project
Submittal Number: 31 23 23-0004-00
Title: Reed Bed O&M

Review Comments

[09/08/2015 Project Admin (Design) - Noah Johnson] Include Warranty
[(none) Project Admin (Contractor) - Steve Lee]

References

This is an automated cover sheet generated by Newforma Project Cloud. It will update when the construction team issues the submittal to the design team and when the design team returns the submittal to the construction team. It is important not to download this PDF and upload a new version as it will not be automated and it will cause duplication of data.

Operation and Maintenance Guidelines



MORA, MN WWTf

Reed Bed Biosolids Treatment System

Prepared July 20, 2015 by

Constructed Wetland Group
10626 Regatta Ridge Road
Boynton Beach, Florida 33473
866-599-2017

CWG constructed wetlands
group

In our mission to better serve you, we have developed the following questionnaire. Please fill out and mail this page or email us at info@reedbed.com for an on-line interactive form.

Maintenance and Inspection Questionnaire



You may know us as Reed Bed Systems, and we are happy to report that since we began working with reeds to treat sludge and other plants to treat wastewater over 35 years ago, we have planted over three million square feet of constructed wetlands in 23 states! In our continuing effort to provide solutions and services, we are in the process of gathering new information and updating our databases to better address your specific needs. **We would appreciate your taking a moment to complete this questionnaire and email to info@reedbed.com**

| | | | |
|---|--|---|--|
| Name of Facility | | | |
| Street Address | | City, State, Zip | |
| Operator | | Facility Phone | |
| | | Cell Phone | |
| When was Facility Planted? | | How Many Reed Beds? | |
| | | Last visited by CWG Personnel | |
| SLUDGE: | | | |
| 1) Type: | | Engineering Co. | |
| 2) Volatile Solids | | Contact | |
| 3) Loading Rate | | Address | |
| 4) Any Problems with Filamentous Bacteria (Nocardia)? | | Office Phone | |
| a) Summer | | Cell Phone | |
| b) Winter | | Number of Years Experience with Reed Beds | |
| c) Seasonal Variations | | | |
| PERMITTING: Is a permit required/do you operate with an amended permit from appropriate state agency? | | | |
| HARVESTING: How do you harvest (burning, cutting) and how much time and labor is involved. | | | |
| EVACUATION: Have you recycled your Reed Beds? If so, when, how? cost? and did you do it in-house or contract out? | | | |
| UPGRADE: Do the Reed Beds handle all of your facilities sludge? Are they considering expansion? | | | |

Contents

Table of Contents

I. DAILY OPERATION..... 3

A. General Description 3

B. Bio-Solids Application 3

C. Summer Operation (May 1st to October 31st)..... 3

D. Winter Operation (November 1st to May 1st)..... 4

E. Supernatant Return 5

II. MAINTENANCE OF THE REED BEDS 5

F. Annual Harvest..... 5

G. Debris Removal..... 6

H. Unwanted Vegetation 6

III. GENERAL INFORMATION..... 7

APPENDICES

Appendix A - Winter Freeze/Thawing

Appendix B - Biological Pest Control Methods

Appendix C - Photos Summarizing Evacuation of Reed Beds at Beverly, New Jersey

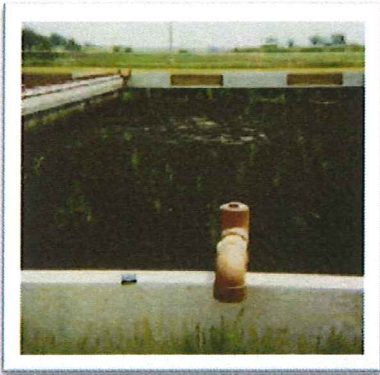
Appendix D - Beverly New Jersey Project Summary



I. DAILY OPERATION

A. General Description

Successful use of the Reed Bed System depends on a continuous Application/drying cycle. A pre-determined quantity of bio-solids will be loaded onto the beds as described below:



Reed Beds after several weeks of planting

B. Bio-Solids Application

At maturity of the reeds, the four (4) Reed Beds will accept approximately Nine Hundred Thousand (900,000) gallons of aerobically digested bio-solids per year, having a solids content of approximately 2%. May 1st to October 31st will be considered the Summer Application Interval. November 1st to May 1st will be considered the Winter Application Interval. The number of applications will depend on climatic conditions. Typically, there should be no more than twenty (20) applications to each reed bed per year. Once the reed seedlings are well established within the four (4) beds that were (planted during the fall of 2015 and reach an average height of 1.5 to 2 feet biosolids can commence. (Mid to late May of 2015)



Mature Reeds

The initial application rate should not exceed 1.5 gallons per square foot (9,000 gallons) to each of the beds which measure 120 feet x 50 feet, which is equivalent to 2.4 inches. Constructed Wetland Group will advise the Mora WWTF personnel when it is appropriate for the beds to receive their full design capacity of 2.0 gallons per square foot (12,000 gallons to each individual reed bed (approximately 3.2 inches). It will be necessary to water the reed beds after the reeds are established until there is a biosolid inventory that can be applied to the reed beds on a regular basis.

C. Summer Operation (May 1st to October 31st)

When the reeds reach maturity, the maximum summer application rate of 2.0 gallons per square foot (12,000 gallons), with a 14-day cycle, should be followed. During the summer months, higher temperatures and active plant growth aid the bio-solids drying process. Cycle time is an operational decision based upon weather, time of year, and condition of each individual reed bed.

In addition, each bed should be monitored to assure the bio-solids are well drained, prior to re-applying additional bio-solids. If standing water is observed, the bed should be taken out of service until drying occurs. During extremely hot weather, and during periods when there is little or no rainfall, the beds may be loaded more frequently than the 14-day cycle. In any event, Constructed Wetland Group should be informed if the operator desires to apply bio-solids more frequently than the 14-day drying interval.



D. Winter Operation (November 1st to May 1st)

Based upon experiences at a number of Reed Bed Facilities during the past 25 years, in which there were some unusually mild winters with virtually no freezing of bio-solids residue within the beds; we offer the following observations and recommendations:

A number of Reed Bed Facilities, including some Facilities that have been in operation for twenty years (Beverly, NJ; Washington Township, NJ) had little or no frozen bio-solids layer during some recent winters. This resulted in a saturated condition of the bio-solids residue during the following spring and early summer. This required extended down time, in some cases eight to twelve weeks because the operators had continued to apply at frequent intervals throughout the winter. This extended drying period was necessary to allow the bio-solids to dry and stabilize. The extent of the freezing of the sludge layer within the reed beds at the Mora WWTF, will determine the drying intervals and the frequency of application. We do not anticipate conditions that will compromise or prevent the freezing of the bio-solids layer within the reed beds at the Mora Wastewater Treatment Facility.



Reed Bed during winter

Attention should be given to the condition of the bio-solids layer within the beds, and specifically to how well it drains; following the complete thaw of the bio-solids, ice, and snow within each bed. The design winter Application rate of 2.0 gallons per square foot with a cycle interval of 21 to 30 days is recommended. The cycle may be extended to as much as 40 days, if climatic conditions require extended time for drying of the beds.

During the first winter (2015/2016), the reed beds should only receive enough biosolids so that the residual biosolid layer does not exceed four (4) inches above the sand. Constructed Wetland Group will provide appropriate recommendations during on-site inspection to the facility. In absence of biosolids reed beds 1 – 4 will need to be covered with burlap as per Constructed Wetland Group recommendation.

The winter cycle will require storage capacity in the digester for excess bio-solids production particularly during the late fall when the plants first enter dormancy. At this time the rate of evaporation is greatly reduced as well as the water uptake by the reeds (evapo-transpiration) is negligible. Prior to the onset of sustained cold temperatures and a frozen bio-solid layer it is important to avoid over-application. During extremely cold periods, the freeze/thaw cycle will aid in bio-solids drainage.



Mature reeds overhanging walls after thunderstorm

We therefore recommend that during periods of extremely cold weather, when ambient temperatures are predicted to remain below freezing, a two (2) inch layer of bio-solids be applied to the bed, if the existing bio-solids layer within the bed is well drained or completely frozen. Once the newly applied bio-solids layer has completely frozen, an additional 2-inch layer can be applied provided the ambient temperature is below freezing.

The aggregate volume of bio-solids applied during the winter period should not exceed the design Application volume, even if there should be an extremely cold winter.

Constructed Wetlands Group will continue to monitor the condition of the beds throughout the winter by making regular inspections of the facility. We encourage our operators to call Constructed Wetlands Group at 866-599-2714 if there is any uncertainty or question regarding winter operation.

C. Supernatant Return

The supernatant return system is set to operate automatically through the underdrain system with no daily intervention. The operator should however, check the system periodically to assure proper functioning. Following the establishment of the reeds within these four (4) beds the under-drains should always remain open



Harvested reeds prior to removal from the Reed Bed (cutting method)

II. MAINTENANCE OF THE REED BEDS

D. Annual Harvest

The beds do not require maintenance other than the annual harvest of the reeds. The emergent stems should be cut in such a way that stubble of 9 to 12 inches is left standing. Harvesting should be done during the winter when the bio-solids are frozen and can be walked upon. The stems and leaves must be removed from the beds and then may be disposed of by composting, landfilling, burning, or combining with other leaf litter. Harvesting can be accomplished by the use of sickle bar mowers, or weed trimmers. Many Reed Bed Facilities have successfully burned the dormant reeds without cutting or

removing them from the beds. Proper precautions and safety measures should be employed prior to attempting to burn the reeds within the Reed Beds. In the past we have not encouraged our facilities to burn the plants in place, as our principle concern was the potential accumulation of metals within the beds if the plants were not removed from the beds each year. Evaluation and review of data and metal assays at a number of facilities, which have burned the plants, suggest that this is not a problem. Metal values have consistently been somewhat lower over time within the accumulated bio-solids layer. An additional concern with regard to burning of the reeds, and one of the reasons we recommend leaving a 9-inch to one foot stubble when cutting the reeds, is that the dormant stalk, which will not renew itself, provides a conduit for oxygen to the rhizome (underground portion of the plant). Experience has shown that completely covering and submerging this dormant stalk will often delay and inhibit the emergence of new stalks during the spring. This also has not been a problem at the facilities, which have successfully burned the reeds in place, as in most cases there is at least four inches of stalk remaining after burning.



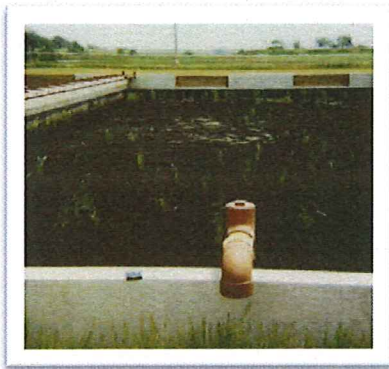
Reed Bed material after mulching (chipping)

E. Debris Removal

Following removal of the cut stems, unwanted debris such as leaf litter should be removed by careful raking so as not to disturb the rhizomes.

F. Unwanted Vegetation

During the first year of operation, the reeds are not dense enough to exclude unwanted vegetation, such as crab grass, tomato plants, tree seedlings, etc. Care should be exercised when cutting grass around the Reed Beds so as to minimize the amount of clippings and weeds entering the bed. These can be removed by hand or by flooding the beds a level of two or three inches above the sand for a period of two weeks since most unwanted vegetation can not survive these wet conditions. This should however, not be attempted without direction from Constructed Wetland Group.



Reed Bed one week after planting

The use of selective herbicides such as 2,4 D manufactured by Dow Agro has been used effectively at a number of reed bed facilities to control unwanted weeds without damaging the reeds. Additional information on 2,4 D can be found at:

(www.dowagro.com/ivm/invasive/prod/dma.htm).

III. GENERAL INFORMATION



Reed Bed suffering stress

1) The beds must never be entered except at harvest time or for removal of unwanted weed growth.

2) Grass around the beds must be cut regularly as well as managing the removal of any unwanted terrestrial weeds growth in close proximity to the beds.

3) In the fall leaves around the beds must be removed to prevent excessive leaf litter getting into the beds.

4) Over-application and application of undigested or inadequately stabilized bio-solids will cause damage to the reeds and will void the warranty. Volatile solids should not to exceed 70% and ideally be in the 60 to 65% range. Ideally, the pH of the sludge should be in the range of 6.0 to 8.0; the reeds are more tolerant of the higher pH.

5) The plants are resistant to insect damage except by Aphids. This pest is controlled by release of ladybugs. As soon as the operator notices Aphids on the reeds, which will typically appear in clusters on the leaves, (usually in late June or early July) Constructed Wetlands Group should be called. The appropriate amount of ladybugs will be shipped as soon as possible. During the first year of growth, the plants are particularly susceptible to Aphid damage, and spraying with insecticides such as Isotox, or Cygon, instead of the release of ladybugs may be indicated. Cygon (active reagent Dimethoate) has been the most effective insecticide used by many Reed Bed Facilities to control Aphid infestations. We have recently used a contact insecticide called Talstar (active ingredient Bifenthrin) to control the aphid infestation.



Reed bed exhibiting nitrogen burn

6) It is not unusual during July and August for well-established Reed stands to show yellowing or browning. In many cases, this is simply the effect of ambient temperatures remaining above 90 degrees, which will in many instances stress the plants and cause browning. Often browning of the leaves and stalks is similar to the effect of over fertilizing a lawn on a hot sunny day. When substantial browning of the Reed stand occurs, we often recommend applying bio-solids to the beds during overcast days, or if possible late in the

afternoon when the sun's rays are not as intense. If there is any unusual appearance of the plants or if the operator is in any doubt to what action to take, Constructed Wetland Group should be called.

Appendix A Winter Freeze/Thawing



A RATIONAL METHOD FOR SLUDGE DEWATERING VIA FREEZING

Sherwood Reed
John Bouzoun
USA CRREL, Hanover, N.H.

Walter Medding
U.S. Corps of Engineers
Washington, D.C.

INTRODUCTION

The traditional method for sludge dewatering for many moderate to small sized wastewater treatment systems has been a simple sand drying bed. However, the increasing use of alum and other chemicals in wastewater treatment significantly affects the drainability of the resulting biochemical sludges. It may be necessary to abandon the drying beds and use more complex mechanical techniques unless a simple alternative for sludge conditioning can be developed.

Freeze thawing of sludge is one possibility. It has already been well established that freezing a sludge will convert a material with an undrainable jelly-like consistency to a granular type material that drains immediately upon thawing. It was the purpose of the work described in this paper to determine if a rational and practical method could be developed for sludge freezing. If successful, the method should then find application as a low cost conditioning/dewatering technique for both water treatment and wastewater sludges.

BACKGROUND

The engineering literature has contained articles and descriptions of sludge freezing for at least the past 55 years (1,2,3,4,5,6). Most of these papers provide very graphic, and similar descriptions of the phenomenon and the potential benefits to be realized. Most of these papers only speculate on the physics and mechanics of the process, and a few attempt to develop a rational and practical method for implementation.

Many early, and some recent investigators suggest that compressive forces caused by ice expansion are the major factor responsible for transformation of the solid sludge particles. Other research suggests that water migration, in liquid films is the principal factor, with compression making some contribution. It has been suggested that the dewatering effect is related to: temperature, time, initial moisture content, freezing rate, electrolytical concentration, zeta potential, and chemical composition of the sludge (9). Fortunately, it is not necessary to define the inter-relationship of all of these factors to attempt the development of a rational procedure for freeze dewatering.

All of the prior investigations agree that the energy costs for artificial freeze-thawing would be prohibitive so that the concept must

depend on natural freezing to be cost effective. This led to the implication that the method could only be feasible in locations with long, extremely cold winters and in fact the actual use of freezing is still essentially limited to those areas.

A few authors have suggested techniques and procedures. Fulton (7) suggested that water plant alum sludges be applied in thin layers to facilitate freezing. Rush and Stickney (6) have developed a preliminary design procedure based in essence on the freezing index for a particular location. Schleppenbach (8) has described sludge freezing in layers at the Duluth, MN, water treatment plant and indicated a relationship between the air freezing index and the frozen depth of sludge. However, in several other locations the approach seems to have been to dig a hole, fill it with sludge and hope it all freezes. The successful experiences that have been documented, demonstrate that a rational design and management procedure should be possible.

THEORY

The environmental factors that would control the freezing of sludge in a particular location are the same factors that would govern the depth of frost penetration in soil and/or the formation of ice on ponds and lakes. The depth of freezing or thawing in these latter cases can be described with Neumann or Stefan based solutions which have the basic form:

$$X = m [I]^{1/2} \quad (1)$$

where: X = depth of freezing or thawing, cm
 m = proportionality coefficient $(^{\circ}\text{C-d})^{-1/2}$
 I = freezing (I_f) or thawing (I_t) index $^{\circ}\text{C-d}$

The solution becomes increasingly complex for multiple layer, multi-phase systems such a snow covered ice layer on a pond or several different soil layers in the profile, each with a different moisture content. However, the basic form had been used for many years to estimate the depth of ice that will form on water bodies. The coefficient m (in metric units) for these cases ranges from 1.70 for small streams or a heavy snow cover on top of the ice to 3.07 for theoretically ideal condition for freezing.

It can be shown with equation 1 that the rate of ice growth decreases with time, under steady-state conditions. This is because the ice layer itself acts as an insulating barrier between the cold ambient air and the remaining unfrozen water. It can also be shown with equation 1 that it is possible to freeze a greater total depth of ice in a given time if the water is applied in thin layers at the surface as compared to continuous ice formation on a deep body of water. This is well recognized in practice and is the basis for construction of ice bridges, hockey rinks and skating ponds. For example, assuming an average air temperature of -10°C and an " m " of 2.00, equation 1 would predict the growth of 60 cm of ice in 90 days. However, if cold ($\sim 0^{\circ}\text{C}$) water were sequentially applied in 4 cm

deep layers at the surface, about 400 cm of ice could in theory be frozen in the same period under the same conditions.

It is critical to the success of the operation with sludge that the entire layer freeze completely if the dewatering benefits are to be realized. In very cold climates with prolonged winters, the layer thickness may not be critical. However, in more temperate areas, and in particular those that experience alternating freeze-thaw periods, the depth of the sludge layer is very important. In these situations, a large single layer may never freeze completely with only the upper portion going through alternating freezing and thawing cycles.

In general, engineering designs are based on "worst case conditions" to insure successful performance of the process at all times. The typical engineering concerns with the freezing index for a particular location are usually related to the maximum depth of frost penetration, so the "worst-case" condition would be the coldest winter during the period of record. However, in this case, the focus is reversed. If sludge freezing is to be a reliable expectation every year the design must be based on the warmest winter during the period of concern, and on a layer thickness that will freeze within a reasonable time if freeze-thaw cycles occur during the winter.

Once a commitment is made to sludge freezing in thin layers, other concerns arise regarding the responses and reactions during the thawing period, particularly with respect to biochemical sludges from wastewater treatment processes. Chemical sludges from water treatment are relatively inert, odor free, and have been shown to retain their desirable granular characteristics upon thawing.

The thawing responses of a frozen, layered mass of wastewater sludge had not been defined prior to this study. Since thawing will commence from the surface downward and the still frozen material beneath is relatively impermeable, will melt water pond on the surface? Will the ponded water lead to odors? Will the biochemical sludges contained in the ponded water revert to their flocculant condition and prevent effective drainage? What effect would subsequent rainfall have on an exposed sludge bed? In addition to developing a practical freezing procedure this study was designed to answer these critical questions regarding thawing.

MATERIALS AND METHODS

The experiments included small scale laboratory tests under controlled conditions and full scale outdoor field trials.

The first goal of the laboratory work was to confirm the applicability of equation 1 for freezing of typical sludge mixtures (3 to 7 percent solids) by comparing the freezing rate of the sludge mixture to the rate for water under the same conditions. A special insulated container was fabricated for this purpose. The central chamber, with a capacity of about 2L, was exposed at the top but surrounded on the sides and bottom by

insulation. The container and the liquid sample (sludge or water) were cooled to about 0.5°C and then placed in a cold room maintained at about -7°C. Data collection commenced with the first ice formation and typically continued until six to eight centimeters of ice had formed (36-48 hours). Preliminary runs confirmed that ice formed from the top and not from the sides or bottom during that period.

Another laboratory experiment froze sludge in layers in a tall plastic column. This was then insulated on the sides and bottom and thawing induced at the exposed upper surface. The purpose was to observe the effects of the ponded water and the responses of the thawing solid particles. The experiment did not succeed since a thin annular space melted around the frozen core and water drained rapidly away leaving the granular solids. The sludge used in all of these laboratory experiments was digested secondary sludge containing a significant fraction of alum.

The field trials were conducted on the surface of a large scale (9x9 m) outdoor lysimeter containing a sandy loam soil. The lysimeter has concrete walls and with the contained sandy soil is a valid representation of a typical sludge drying bed. Three sequential layers (each about 8 cm) of digested primary sludge (6 to 8% solids) were applied to the bed. Thermocouples were used to monitor temperatures and depth of freezing was measured directly. Each layer was allowed to freeze prior to the next application. Observations continued through the thaw period and included several rainfall events.

RESULTS

The laboratory scale freezing experiments confirmed that sludges at concentrations typically found in the field (3 to 7% solids) freeze at essentially the same rate as tap water and that the rate can be described with equation 1 as modified below:

$$X = 1.87 \sqrt{(\Delta T)(t)}$$

where: $(\Delta T)(t)$ = freezing index, °C-d

The coefficient 1.87 derived from the experiments is within the range previously reported but may be unique for the container or the particular environmental conditions and should not be used for design. The frozen sludge samples from these experiments drained rapidly during the thawing process. Solid concentrations were approaching 25 percent at the point when thawing was complete. Comparative experiments with the same sludge indicated that the unfrozen material lost moisture via desiccation and took many weeks to reach the solids concentration achieved in one day by freeze-thaw conditioning. Similar results have been observed by many prior investigators.

The first sludge at 8% solids was applied to the field test on 29 February 1984 in a layer about 10 cm deep. The sludge was quite warm (30°C) having been hauled directly in a tank truck from the treatment plant

digester. The temperature at mid depth had cooled to about 9°C in four hours, and ice formation began within 24 hours. Probing around the perimeter indicated it was completely frozen at many points within 48 hours. The soil surface in the bed was irregular and there may have been deeper pockets near the center still not completely frozen at that point. The air temperature during this period ranged from -4°C to -17°C with negligible wind.

The second sludge application, at 7% solids, was applied in an 8 cm layer, about midday on 2 March 1984 on the frozen surface of the previous layer. The sludge was again about 30°C and the air temperature at the time of application was -4°C. The sludge temperature at mid depth in the new layer cooled to about 0°C in about 8 hours with ice formation again commencing on the surface within 24 hours. Probing near the bed perimeter again indicated complete freezing within 48 hours. Approximately five centimeters of snow fell on the bed in the next 24 hours.

The final 8 cm application, at 6% solids, was not made until 12 March 1984, only because sludge was not available until that date. The air temperature at the time of application was -6°C with a wind speed at about 16 km/hr. The initial sludge temperature was again 30°C and the application of warm sludge melted all of the snow that had accumulated on the bed. A snow storm commenced about 20 hours after the sludge was applied. The newly frozen sludge was about 3 cm thick at this time. It continued snowing for 24 hours with a total accumulation of 60 cm. Probing, 60 hours after the sludge application indicated about 6 cm of the new layer had frozen, with 1 cm of snow on top of the ice layer in a wet slushy condition. Ambient air temperatures during this 60 hour period ranged from -6°C to -15°C.

The thaw period began almost immediately after the snow storm so by the 20th of March (8 days after final application), daytime air temperatures were above 0°C. By the 23rd of March, the snow had all disappeared and there was about 6 cm of mixed meltwater and thawed sludge on top of the remaining frozen material. On the 29th of March, only 7 cm of partially frozen material remained with no ponded water on the surface and no odors. Apparently the melt water drained away through cracks in the still frozen material. The solids concentration of the thawed sludge cake on top was 26 percent. On the 2nd of April, all of the sludge was thawed and the solids concentration was 35 percent.

DISCUSSION

The total depth of liquid sludge applied was 26 cm. Allowing for about 20% expansion during freezing, the depth of frozen material would have been about 31 cm (not including the snow). This material thawed completely in 14 days with ambient air temperatures in the period ranging from 1°C to 12°C. On the 13th of April (11 days after thawing was complete), the solids concentration was about 54%. During the period 14-16 April, a steady rainfall occurred with a total of 5 cm of precipitation. There was no ponding during the rainfall and the solids concentration was

40 percent about 12 hours after the rain had stopped. Odors were never noted at any time in the thawing or drying period.

The data analysis for the various freezing and thawing observations indicated a range of values for the coefficient in equation 1, from 2.01 to 2.14. A median value of 2.04 is suggested for design, and was confirmed by independent freezing observations at a U.S. Army Depot in Pennsylvania during February-March 1984. It also can describe the freezing results reported at the Duluth, MN (8) water treatment plant.

The sludge layers used in the field trials were not specifically designed but were the result of the tank truck capacity and the bed area. A separate analysis was conducted to determine a generally applicable layer thickness for design purposes. It is unreasonable, and not cost effective to expect treatment plant operators to apply a few millimeters of sludge on a frequent schedule. On the other hand, a very thick deposit may never freeze to the bottom. Calculations with equation 1 and the coefficient determined above tend to converge on 8 cm as a practical layer for all locations. At -5°C an 8 cm layer should freeze in about 3 days, at -1°C it would take about two weeks which is still practical. A 10 cm layer, for example, would require 22 days to freeze at -1°C which is too long when the potential for freeze-thaw cycles are a factor.

A greater depth should be feasible in colder climates. Duluth, MN successfully freezes sludge in 23 cm layers. However, 8 cm should be feasible in even moderately cold climates. It is suggested that 8 cm be used for feasibility analysis and preliminary design. A larger increment may then be justified by a detailed evaluation during final design.

The sludge used in the field trial came directly from the digester, it was very warm and required almost 24 hours to cool enough for ice formation to commence. In many other situations the sludge may come from storage and be colder but it is suggested for all situations that a one day allowance be made for sludge application and cooling in the design calculations (equation 1 is based on the assumption that the liquid at the freezing front is at 0°C).

DESIGN PROCEDURE

As indicated previously the design must be based on the warmest winter of record or period of concern to insure reliable performance at all times. The most accurate, and most cumbersome approach is to examine the weather records for a particular location and determine how many 8 cm layers of sludge could be frozen in each winter. The winter with the lowest total depth is then the design year. This approach might assume, for example, the first 8 cm application on 1 November. Equation 2, below can then be used to calculate the number of days required to freeze the layer under the average daily temperature conditions indicated in the records

$$t = \frac{\left(\frac{x}{m}\right)^2}{\Delta T} \quad (2)$$

with 8 cm layer and $m = 2.04$;

$$t = \frac{15.38}{\Delta T}$$

where: t = time to freeze an 8 cm layer, d

$$\Delta T = 0^\circ - T_A$$

T_A = mean daily air temperature, °C

Account is taken in the calculation of thawing periods and a new application is not allowed until the previous layer has frozen completely. One day is then allowed for application and cooling of the next layer and then equation 2 repeated to again determine freezing time. The first use of this approach was at a U.S. Army depot in eastern Pennsylvania. The calculations showed that about nine 8 cm layers of sludge could be frozen in the design year. Previously it had been suggested that freezing was not a viable approach for this location because of the relatively moderate winters.

Another, more rapid approach for preliminary design has been developed by relating the potential total depth of sludge that could be frozen to the maximum depth of frost penetration for the same location. It seemed reasonable that the two should be related since they are both dependent on the same environmental factors. Weather records were obtained for selected locations for the period 1972-1983. Calculations were then made as described above to determine the number of 8 cm increments that could be frozen in the warmest winter during the study period. These values were then compared to the published data (10) for maximum frost penetration for the same location. The results are summarized below.

| Location | Total sludge depth (Σ of 8 cm increments) cm | Maximum depth frost penetration cm |
|----------------|--|--|
| Tobyhanna, PA | 72 | 113 |
| Pittsburgh, PA | 99 | 97 |
| Denver, CO | 68 | 107 |
| Bismark, ND | 229 | 201 |
| Pocatello, ID | 91 | 102 |
| Duluth, MN | 290 | 206 |

The equation describing these data takes the form:

$$\Sigma X = 1.76 (F_p) - 101 \quad (3)$$

where: ΣX = total depth of sludge that could be frozen in 8 cm increments,
cm

F_p = maximum depth of frost penetration

the r^2 for this correlation is 0.92.

As indicated by equation 3 sludge freezing will not be feasible unless the depth of maximum frost penetration is greater than 57 cm for a particular location. In general, that will begin to occur above the 38th parallel and include most of the northern half of the United States, with the exception of the west coast. However, it is unlikely that sludge freezing will be cost effective, because of the large area required, if only one or two 8 cm layers can be frozen in the design winter. A frost penetration of about 100 cm would allow sludge freezing for a total of 75 cm and depending on land and construction costs, the process may be cost effective at that stage. Frost penetration data can be found in reference 10; representative values and the calculated sludge depths are given below.

| Location | Maximum frost penetration cm | Depth of sludge freezing, calculated with equation 3 cm |
|-----------------|---------------------------------|--|
| Bangor, ME | 183 | 221 |
| Concord, NH | 152 | 166 |
| Hartford, CT | 124 | 117 |
| Chicago, IL | 122 | 113 |
| Omaha, NB | 114 | 100 |
| Minneapolis, MN | 190 | 233 |
| Rapid City, SD | 162 | 184 |
| Butte, MT | 127 | 122 |
| Montreal, Que. | 203 | 256 |

Example

A community near Chicago, IL is considering sludge freezing as a dewatering technique for their annual 3000 m³ sludge production.

$$\text{Area for freezing-drying beds} = \frac{3000 \text{ m}^3}{EX} = \frac{3000}{1.13} = 2654 \text{ m}^2$$

Could use 16 beds, each 7 m x 24 m

Allow 20% for expansion, and 16 cm freeboard, so:

$$\text{Depth: } (1.20)(1.13) + .16 = 1.5 \text{ m}$$

It is suggested that the drained biochemical sludges be removed each year. Inert chemical sludges from water treatment could remain in place for several years. In these cases, a bed 2 to 3 m deep could be constructed and the residual sludge solids allowed to accumulate for several years prior to removal and disposal. The bed details can be designed with standard drying bed criteria. The final design should evaluate actual weather records to determine the "worst-case" year.

CONCLUSIONS

Sludge freezing can be a reliable dewatering method for most of the northern United States and Canada. The rational procedure described in

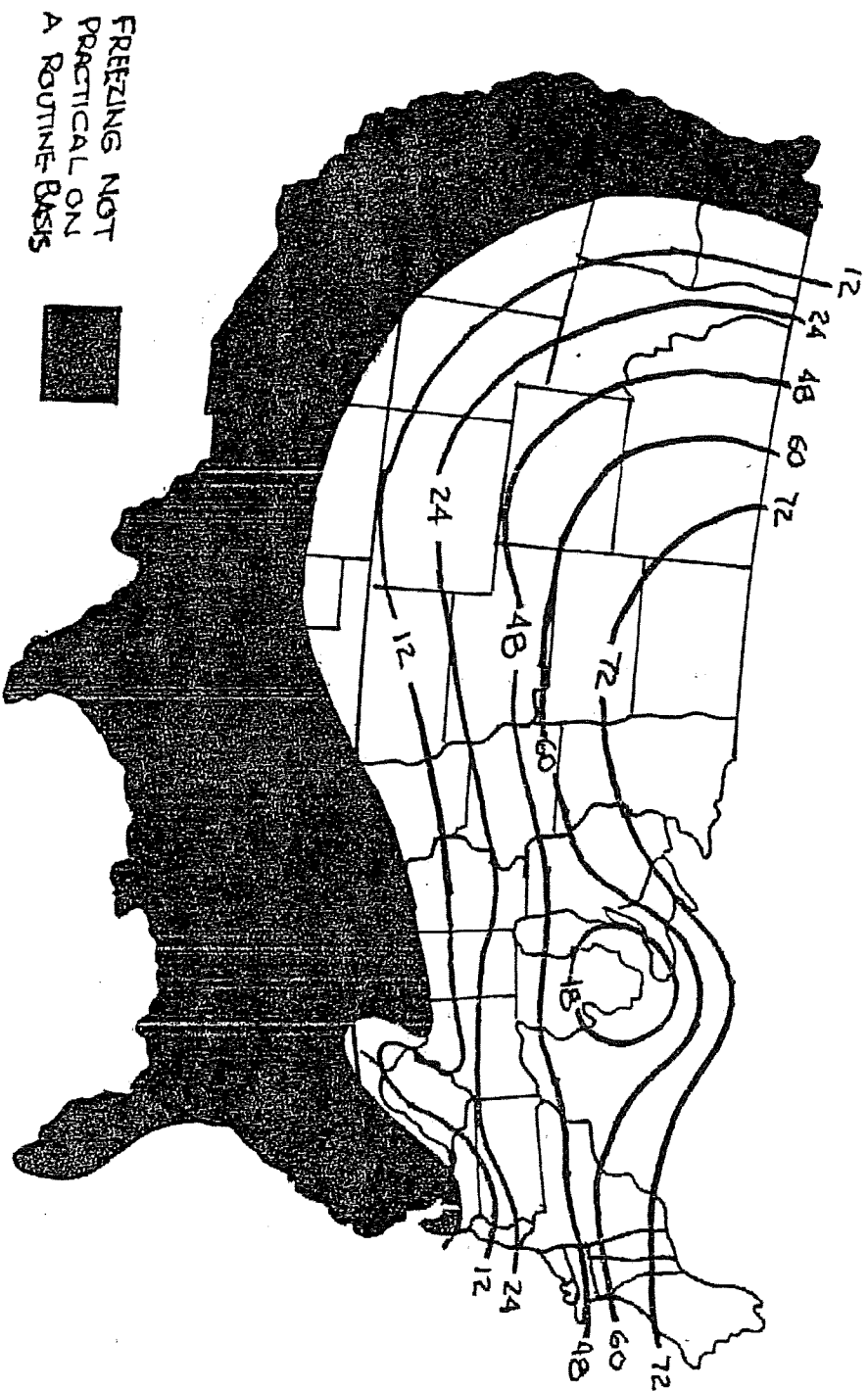
this paper can be used for design and for management by plant operators. The procedure can be used for design of new systems as well as conversion of existing drying beds. Exposed beds will be more effective than covered units, however, the freezing process will be accelerated if accumulated snow is removed. Cost effectiveness of the process will depend on area requirements and land costs and on the capability to store sludge during the warm part of the year. Odors should not be a problem with digested biochemical sludges. Odors may be a concern during the thawing stage with unstabilized biological sludges.

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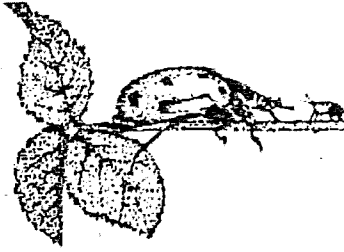
Potential Depth of Sludge That Could Be Frozen If Applied in 3 inch layers (inches).

Appendix B Biological Pest Control



THE LADYBUG COMPANY

(Bio-Control Products)

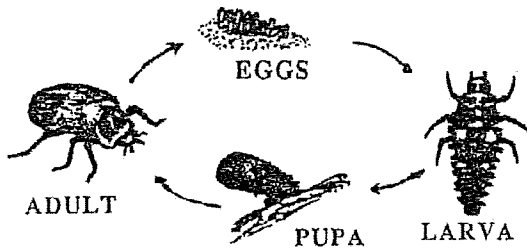


P.O. Box 329
Berry Creek, CA 95916
Phone: (916) 589-5227

THE LADYBUG CO. CATALOG

WHAT IS BIOLOGICAL CONTROL?

Biological control is the use of natural enemies to reduce or check the abundance of pests. It is nature's principal means of keeping various organisms in balance, and is the backbone of any successful, long-term pest control program. Applied biological control has literally saved several major agricultural industries in the U.S. (such as citrus in California and sugar in Hawaii). The euphoria caused by the promise of chemical methods has eclipsed biological control since the 1940's. However, more advanced knowledge is restoring the proper perspective, and the future for biological control looks brighter than ever. Consider that there are over 5,000 insect pest species known world-wide. Of these 5,000 species, projects to control only 223 or 4% have been attempted using importations of new natural enemies. Of the 223 attempts, 120 or 54% were successful. It is remarkable that control projects using importations have been attempted on only 4% of the pest species, even though there is a 54% chance of success!



LADYBUG LIFE CYCLE

CONVERGENT LADYBEETLE (*Hippodamia convergens*)

This ladybug is the most abundant of about 370 species occurring in North America. It is one of the most effective and economically important insect predators known. It feeds on tiny, soft-bodied insects, and the eggs and small larvae of others (including a long list of moths). Some of the many insects it destroys include: aphids (its favorite), scale insects, thrips, mealybugs, leafhoppers, leafworms, corn earworm (also known as bollworm and tomato fruitworm), pink bollworm, European corn borer, Colorado potato beetle, alfalfa weevil and bean beetles.

In California, when it hatches from the egg in March or April it begins feeding voraciously on aphids and other tiny insects. As a larva it will gorge on about 400 aphids. During this larval period it resembles a tiny black, six-legged alligator

with orange spots. After 3 or 4 weeks it attaches to a leaf or twig and enters the pupal stage. In another week the pupal skin splits and a hungry young adult emerges to resume feeding on other insects. As an adult it may eat another 5,000 aphids. Up to 1,500 tiny yellow eggs may be deposited in clusters of 10 to 50 in just a few weeks. In good years several generations may be produced. The beetles' big appetite and high reproductive capacity allow it to rapidly clean out its prey. In California, this can trigger the annual migration to the mountains. On warm, calm days, millions of ladybugs fly from the fields in the Central Valleys and drift on upper air currents to surrounding mountains, perhaps 50 miles away. If prey is available there they eat and reproduce. If prey is scarce they seek out nectar, honeydew and pollen to build fat reserves for a long dormancy period. This period is spent in deep, cool canyons where they aggregate by the millions in forest litter. This usually occurs in early June, and they can then be collected in abundance and moved to localities with pest problems.

The ladybugs remain dormant on the "beds" all summer and winter. As the weather begins to warm up in early spring they begin actively mating before their migration back to the valleys below. On warm, calm days in late January through February they once again disperse into the upper air currents to drift out to the valleys. As the air cools in the evening they settle into the green fields to begin feasting on aphids and producing eggs to complete the cycle.

Shipping and Handling (Also, See General Instructions)

Our ladybugs are collected twice annually. "Old" bugs are collected in January and February and "young" bugs are collected from early June into the summer. Quite often, no bugs are available in mid-May because all the old ones have died and the young ones have yet to migrate. Our ladybugs are crawl cleaned—meaning, we ship only pure, live ladybugs that have crawled away from leaves, dead bugs and other matter. We pack them in excelsior-filled cotton sacks, placed in well-ventilated cartons or crates. There are about 75,000 ladybugs per gallon.

Being wild creatures, ladybugs will leave if they don't like their new home. You may have to experiment to provide the right environment for them. Some important measures to take are: 1) release in the evening or later because they will not fly at night and need a "settling down" period after being handled; 2) sprinkle the release area with water to give them a drink (Bio-Control Honeydew™ or a 10% sugar solution may be helpful); 3) piles of vegetation and stacks of boards are attractive to them, especially on hot summer days; 4) when releasing large quantities in fields, gently scatter or spread them out so each bug can find food immediately.

GENERAL INSTRUCTIONS

We suggest you schedule releases of beneficial insects for the early spring, soon after the time the last killing frost normally occurs. This marks the approximate time pests increase enough to begin supporting large populations of beneficial insects. It is important not to release your insects too early, as they will die or fly away. We will ship your insects at the best time for your area based on USDA Frost Zone Records unless you request a special date. Upon receiving your order, we immediately confirm the shipping date with you.

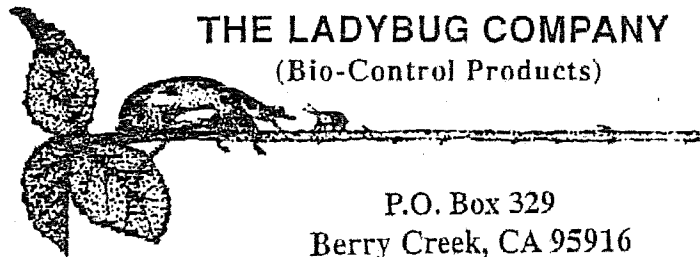
Light early releases in cotton, alfalfa and corn are suggested to help control such pests as aphids, thrips, greenbugs, leaf and fleahoppers, etc. In cotton and corn heavier releases are common during the main growing season each time moth flights appear and while the eggs and small caterpillars are still vulnerable. In alfalfa, subsequent heavy releases are often made after each cutting.

Storage is very rough on insects we sell and is not recommended. However, in emergencies, and possibly with heavy losses, green lacewings can be held in a refrigerator (preferably the crisper) at 45-48 deg. F. for about 10 days. Trichogramma can be held at 40 deg. F. for about a week if they haven't emerged and "old" ladybugs can be held for variable periods at 33-45 deg. F.

"Young" ladybugs, however, can be held at 33-45 deg. F. quite easily for a couple months, allowing you to release a few at a time as needed at the base of infested plants. Praying

mantis can also be held until needed at just above freezing. In all cases the relative humidity should be at least 55%. With self-defrosting refrigerators, store the insects in the crisper with a wet towel or sponge. Instead of storage it may be best to order your insects on a weekly, twice monthly, or monthly schedule. Most shipments are priority mail (airmail) and UPS when practical. *Contact your postmaster or other carrier to make arrangements for speedy and proper handling of your live insects on your end. Keep them cool, well-ventilated (especially ladybugs) and out of the sun.* Rural mail boxes and closed cars on hot days are murder on them!

To help insure the success of your program, there are many ways you can improve the habitat for beneficial insects in your garden or on the farm. One of these is to keep moisture levels high because many beneficial insects require high humidity and/or ready access to free water droplets. High humidity is more easily maintained by having plants close together. The garden or field should have various flowering plants to provide nectar and pollen for adult beneficial insects. Often, with healthy plants, such pests as aphids and whiteflies can be tolerated for the honeydew they provide lacewings and other beneficial insects. Ants, however, must be controlled because some kinds will "milk", "herd" and protect honeydew-producing insects from predators. Periodic applications of *Bio-Control Honeydew™* will supplement some of the above favorable conditions. In general, a mixture of closely growing plants including cover crops of unmowed grass and flowers will greatly benefit both native and introduced beneficial insects. Higher productivity of your garden or farm should result.

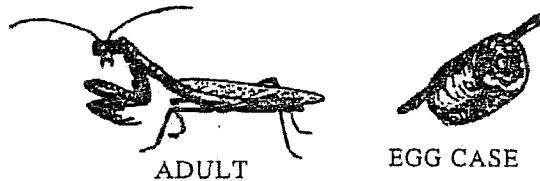


THE LADYBUG COMPANY (Bio-Control Products)

P.O. Box 329
Berry Creek, CA 95916
Phone: (916) 589-5227

A minimum order of Trichogramma is about 40,000. This is plenty for the average garden. For irrigated field crops we suggest about 10,000 per acre. For dry land field crops we suggest about 3,000 per acre. In orchards release 50,000 - 100,000 per acre in 3 or more releases. A suggested schedule would have 50% of the total released the 1st time and 25% each on 2 subsequent releases.

Trichogramma are shipped in cups inside a cardboard box. They are immature when shipped and still inside the host eggs. The host eggs with parasites are stuck to and cover one side of a sheet of paper. Keep them warm, and in a somewhat humid place. Soon after arrival the adults should begin emerging from the host eggs. They are very tiny and difficult to see—look closely. After most have emerged, release them by placing the open container in a protected spot near infestations.



ADULT

EGG CASE

CHINESE PRAYING MANTIS

CHINESE PRAYING MANTIS (*Tenodera aridifolia sinensis*)

The praying mantis is a most interesting and enjoyable beneficial insect to have around the garden and farm. It is the only known insect that can turn its head and look over its shoulder. Mantises lie in wait for their food and when close enough, snap it up with a lightning movement of their strong forelegs. Measurements of their reflexes show they react more than 2 times quicker than houseflies. Mantises have enormous appetites, eating various aphids, leafhoppers, mosquitoes, caterpillars and other soft-bodied insects when young. Later they graduate to larger insects such as large beetles, grasshoppers, crickets, tent caterpillars and most others. The Chinese species may grow to 5 inches long, consuming huge volumes of insects (no vegetation).

The ferocious-looking praying mantises actually make great pets. Some will even eat raw meat and insects from your fingers. With plenty to eat they usually will not stray far. If handled properly they don't bite (don't pick them up behind the forelegs).

The female deposits the eggs in the fall in a frothy secretion that hardens and protects the eggs from predators and severe winter climates. The egg "cases" are attached to vegetation and may contain 50 to 400 eggs with an average of about 200. At least 10-15 good hot days may be required for hatching. Upon hatching in the spring the young crawl from between tiny flaps in the case and hang from silken threads about 2 inches below the case. After drying out, the long-legged, mosquito-like young disperse into the vegetation leaving little evidence of their appearance. This happens within an hour or two and it is difficult to know hatching has occurred unless the elusive, well camouflaged young are found. The egg case does not change appearance in any way.

The mantis sheds its skin several times during the spring and summer to accommodate new growth. After the last shed the mantis has fully developed wings. Camouflage colors of grey and green are common. After mating, the female sometimes eats the smaller male. She may lay eggs in 1-5 "cases" and die shortly afterward.

Attach or hang the egg case to a bush, limb or anything 2 or more feet above ground. It may be hung easily by running a needle and thread through the outer surface of the case (the eggs lie well beneath the surface). A hanging, swinging egg case is safer from birds and other predators. Oil the upper part of the string to keep ants away. Some tests indicate 75-90% hatch out.

BIO CONTROL HONEYDEW

Most adult predatory and many parasitic insects seek out and feed on some combination of honeydew, nectar and pollen. Honeydew is produced by such insects as aphids, scales, mealybugs and whiteflies. This sticky substance which is often found dripping from trees and other plants contains many nutrients and is especially high in sugar. It is an important product in the insect community. Ants "milk" and herd insects that produce it and honey bees often produce important honey crops from it. Nectar is another sweet substance that lures insects to the high protein pollen of flowers. Attraction of pest insects to these substances is relatively unimportant, as few pests use them for egg production.

Bio-Control Honeydew™ simulates a mixture of honeydew, nectar and pollen. It attracts and retains many beneficial insects that seek out these foods and is so nourishing that it even stimulates some to produce or lay eggs. In this way an abundance of natural enemies can be made available to devour expected or already present invasions of pest insects.

The main ingredient in *Bio-Control Honeydew™* is a special nutritional yeast protein (*Saccharomyces* yeast fermented on whey). The main insect attractants it contains are sugar and the amino acid tryptophan (especially attractive to green lacewings). This high protein diet effectively substitutes for nutrients in natural honeydew, nectar and pollen. It is the best of the many beneficial insect foods tested (including Wheat), and stimulates green lacewings and others to produce eggs. Green lacewings can lay about 30 eggs with reserves from their larval feeding. However after being fed *Bio-Control Honeydew™*, they can produce 30 eggs per day for a month or more. Some insects must eat aphids for egg production but *Bio-Control Honeydew™* can stimulate them to lay those eggs produced.

Scientific experiments using artificial honeydews of this nature have shown that the honeydew increased beneficial insects in alfalfa and green peppers resulting in reduction of aphids to less than half the levels in comparative plots. Similarly, lygus bugs in potatoes and bollworms in cotton were reduced or controlled. Also, populations of adult ladybeetles and lacewings were maintained or increased until corn leaf aphids and European corn borers appeared. The predators then reduced these pest populations considerably. These experiments and others show that *Bio-Control Honeydew™* can be widely and effectively used in biological control programs.

Bio-Control Honeydew™ can be safely applied to fruits, vegetables and other foods. It is entirely safe for human consumption and all ingredients are widely used in the food industry. It is also a great pollen substitute for honeybees.

Instructions

Bio-Control Honeydew™ comes as a dry powder. Mix with about 4 parts warm water and spray on plants. Insects will be attracted and eat it even after the mixture has dried. It can also be sprinkled in its dry form over wet vegetation. Before large scale use, a test may be desirable on a small area.

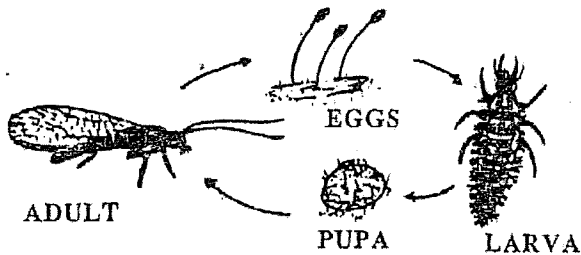
Release Rates

For gardens and greenhouses our 3 most popular sizes are:

Small garden or greenhouse area—1/2 pint
 Medium garden or greenhouse area—1 pint
 Large garden or greenhouse area—1 quart

Common release rates for large-scale use are:

| | |
|--------------------|-------------------------|
| Grain Crops | 1 gal. per 10 ac. |
| Cotton and Alfalfa | 1 gal. per 10 to 20 ac. |
| Vegetable Crops | 1 gal. per 3 ac. |
| Melons | 1 gal. per 15 ac. |
| Orchards, Groves | 1 gal. per ac. |
| Evergreens | 1 gal. per 3 to 5 ac. |



GREEN LACEWING LIFE CYCLE

GREEN LACEWING

(*Chrysopa carnea*)

The green lacewing is another of the most effective predatory insects known. The non-predacious adult is a beautiful pale green with bright, golden colored eyes. The young or larva is mottled grey or yellowish and alligator shaped. It has long sickle-shaped jaws used for attacking its prey. The larvae are active hunters and are very appropriately called "aphid lions," although they also consume many other kinds of insects.

The list of insect pests green lacewing larvae attack is impressively large, including among others: aphids and red mites (two favorites), spider mites, whiteflies, psyllids, thrips, mealybugs, leafhoppers, scale insects, psocids (bark lice) and a wide variety of moth eggs and caterpillars.

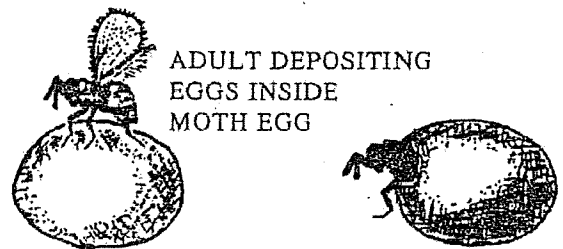
Lacewings deposit each egg on the end of a long filament which holds it out of reach of its own cannibalistic siblings. The eggs are usually scattered about on vegetation and hatch in about 5 days. The tiny voracious larvae grow to about 3/8 inch long in 2-3 weeks. It then spins a white, round cocoon and about 5 days later the adult emerges. After a few days of feeding on nectar, honeydew and pollen the female begins laying up to 10 to 30 eggs per day for about 30 days. Adults overwinter in protected areas to lay eggs and resume the cycle again in the springtime.

Shipping and Handling (Also, See General Instructions)

Lacewing eggs are shipped in containers with enough food to last 2-3 days after hatching and some rice hulls to provide more crawl space and reduce cannibalism. The eggs will appear as a mass of fibrous stalks with pale green eggs attached. Within a day or two they will turn grey with hatching the following day leaving a white eggshell. Food for the larvae consists of sterile (frozen) beetle or moth eggs. Keep above 70 deg.; preferably about 80 deg. F.

For small gardens our minimum order of 5,000 is recommended. For large scale uses, an early spring release of 1,000 to 2,000 per acre is usually adequate. In orchards and crops with high pest populations even higher release rates or subsequent releases may be desired.

For large scale application it is important to try to distribute lacewings soon after they've hatched. This way the larvae are able to cling to plants when "salted" but cannibalism is kept to a minimum. If necessary, additional rice hulls, wheat chaff or coarse sawdust can be mixed in for easier handling. Slight moistening will help unhatched eggs stick to this material. Larvae which fall on bare ground can easily crawl 1 or 2 feet to nearby plants.



YOUNG ADULT EMERGING FROM MOTH EGG

TRICHOGRAMMA

TRICHOGRAMMA

(*T. pretiosum*, *T. minutum*)

Trichogramma are tiny insect egg parasites related to common wasps. Although adults are microscopic in size, they are one of the most effective beneficial insects known for controlling lepidopterous (moths & butterflies) insects. The female deposits her eggs inside eggs of host insects. The parasitic young soon hatch and feed on the juices within the host egg, thus killing it. Within 8-10 days the young Trichogramma has grown through the larval and pupal stages and emerges as an adult. After mating, the female searches for more fresh moth eggs in which to lay her eggs and complete the cycle. Rapid completion of its life cycle allow it to quickly outnumber and control pest insects. It is completely harmless to people.

Experiments have shown 60-95% better control of pests such as the bollworm and tobacco budworm than in untreated fields. Trichogramma often consumes up to 98% of a host's eggs in nature. There are over 200 lepidopterous pests it is known to attack, some of which are bollworm (corn earworm, tomato fruitworm), European corn borer, alfalfa worm, tent caterpillars, cutworms, hornworms, codling moth, gypsy moth, etc. If your pest is a caterpillar, there's a good chance Trichogramma attacks its eggs.

Appendix C

Photos-Evacuation of Beds





30" wide floatation's Tracks



Reed Stems Layer down into mat



Bucket Teeth are spaced 6 to 8 inches apart
Note the sludge is not sticking to the bucket



Stop digging when you see sand layer
Note the root growth in sludge layer



Job Completed



Sprinkling Started



Flooding Beds with Secondary Effluent



3 Weeks of Growth



2 Months of Growth

Appendix D Beverly, New Jersey Project



BEVERLY SEWERAGE AUTHORITY

P.O. Box 374
Beverly, N.J. 08010

Fred Weller
Superintendent O & M

Telephone: (609)387-0372
Fax: (609)387-5653

Dear Mr. Scott Davis

As per your request the following is a report on sludge disposal using the Phragmites Reeds at The Beverly Sewerage Treatment Plant, located in Beverly City, NJ.

The Beverly Sewerage Treatment Plant services the City of Beverly and the Township of Delanco. The treatment plant design flow is 1.0 MGD, however the actual flows are less than 0.500MGD. The treatment process is Anaerobic, Primary Settling (Imhoff Tanks) followed by High Rate Trickling Filters, Secondary Settling and chlorination with the final effluent discharged to the Delaware River.

Anaerobic Sludge is removed daily from the primaries at 2 to 3 % solids and is drawn into primary holding tanks. There the sludge is decanted and the solid concentration of the sludge can increase by as much as 5 to 7 % before being transferred to the secondary holding tanks. Sludge in the secondary holding tanks is Anaerobically digested with a minimum retention time of 15 days. The solid concentration of the sludge removed from the secondary holding tanks therefore gets to be so thick that the double plunger pump has trouble pumping the material to the reed beds. Secondary effluent is used to dilute and break up the sludge so it can flow evenly onto and through the reed beds.

In May 1985 The Beverly Sewerage Authority under contract with Constructed Wetland Group converted 13,400 sq.ft. of open air sand drying beds into artificial wetlands with the planting of the Reeds. (one plant per sq. ft) In the first year 5/85 through 12/85; 50,000 gallons of sludge was loaded to the beds. In the spring of 1986; Reeds were popping out all over, Sludge was loaded sparingly for the first few months. During the summer months we loaded the bed every 15 days and during the winter we loaded every 30 days. By the end of the year (1986); a total of 208,100 gallons of sludge was loaded to the beds. In addition, 30 cubic yards of stock piled sludge was dumped into the beds with the approval of Constructed Wetland Group We also used one portion of a bed for dumping our Jet-Vac sewer cleaning machine which contains a great deal of grit and grease from the collection system.

In June 1987, 2 feet of tongue and grooved pressure treated lumber was added to the existing concrete walls making the total freeboard 4.5 ft, increasing the life of the beds from 5 years to 10 years.

| YEAR | LOADING | GALS.SF | TS |
|---------------|------------------|----------------|-------------|
| 1985 | 50,000 | 3.73 | 4.20 |
| 1986 | 208,100 | 15.53 | 4.74 |
| 1987 | 280,600 | 20.94 | 4.86 |
| 1988 | 304,400 | 22.72 | 5.11 |
| 1989 | 300,400 | 22.42 | 5.28 |
| 1990 | 292,800 | 21.85 | 5.20 |
| 1991 | 260,400 | 19.43 | 5.10 |
| 1992 | 305,500 | 22.80 | 5.28 |
| 1993 | <u>233,700</u> | <u>17.44</u> | <u>4.99</u> |
| TOTAL= | 2,235,900 | 166.86 | 4.97 |

In December 1993, after 8 years of operations, the reed beds were taken out of service because the wooden tongue and grooved freeboard retainer walls were popping at the seams, leaking and bowed out during loading. When the beds were shut down we had approximately 8" of freeboard remaining, and by the time the excavation started (7/94) we had almost 12" of freeboard and the sludge had shrunk back off the side walls by 5" inches.

In June 1994, the Authority awarded a contract to excavate & transport the dried sludge to an approved landfill; with the understanding that all excavation work must be done from outside of the beds to protect the underdrains from damage.

Waste Management of PA. sampled and tested the sludge for Approved Land disposal and then made arrangements with the Authority for its ultimate disposal at the following:

G.R.O.W.S Landfill
 Falls Township, Pa.
 c/o Waste Management of PA.

In July 1994, the excavation began. The contractor provided an excavator with 30" wide floatation tracks, and due to the fact that the reed stems were not harvested that year, the reed stems were laid down by the excavator creating a natural matting under the tracks of the excavator, therefore we allowed the contractor to enter the beds and within 10 days the entire project was completed.

Total of 440.83 Tons of dry sludge was removed.
 (small concrete divider walls mixed in sludge that was hauled out to landfill)

\$22,000.00 Dumping Fees
 \$25,000.00 Excavation Cost
 Total Disposal Cost \$47,000.00

At the completion of the removal project, the underdrains of the beds were closed and the beds were flooded with effluent, and within two weeks the reeds started to grow back.

A small amount of sludge was applied for the winter. In the spring of 1995, sludge was again applied very lightly because of a delay at the DEP Office. Our permit for the reuse of the beds was not received until late in the spring of 1996.

In 1995 the total gallons loaded = 32,000 gals

In 1996 the total gallons loaded = 86,000 gals

In 1997 the total gallons loaded = 132,800 gals.

The loading in 1998 is light, because it is the intention of the Authority in 98/99 Capital Improvements Budget to remove all the old wood and concrete walls and construct all new reinforced water tight concrete walls, 5' high, with new distribution piping around the reed beds.

The only problems I experienced were the following:

1. Summer Aphids stress out plants.

Solution: 5 qts. of lady bugs released at sunset over the months of July or August

2. Uneven sludge layer.

Solution: Used 4" of flat hose to load sludge at low points of the reed beds.

In closing, I would like to say that the reed bed system has worked very well for Beverly with very little trouble and extremely low maintenance. The reeds have saved Beverly Sewerage Authority a good sum of money over the 8 years in operation. During that period we hauled out liquid sludge and we paid an average of \$37,000.00 per year in Hauling & Disposal Cost.

The many visitors that have toured our plant are always surprised how little was involved in implementing and operating such a system and cannot believe that they are standing next to millions of gallons of sludge.

I have enclosed copies of analysis performed on the sludge and the harvested reed stems.

If you have any questions concerning this letter or would like more information, please feel free to contact me at (609) 387-0372 or Email info@reedbed.com.

C.Fredrick Weller, Supt.
O & M BSA/DSA

**Constructed Wetland
Group**

10626 Regatta Ridge Road
Boynton Beach, FL 33473

info@reedbed.com

973.729.9849 phone
866.599.2714 toll-free
888.843.6479 fax

www.reedbed.com

October 9, 2020

Dear City Council Members,

We write to address your decision to withhold \$20,000 representing the final payment to Gridor Construction, which is now overdue. This we understand comes at the recommendation of Greg Anderson, the Mora City Engineer, and Lindy Crawford, the City Manager. As you know, because of our contractual arrangement with Gridor on this project, CWG is directly and adversely impacted by this decision. For the reasons discussed below, CWG does not accept this position and strongly disagrees with Mr. Anderson and Ms. Crawford's recommendation.

CWG has met and exceeded all obligations and deliverables as set forth in its sub-contract Agreement with Gridor Construction. These include, but are not limited to, the following:

- Planting of the native reed *P. australis americanus* during the fall of 2015. This was done prior to the Mora Wastewater Treatment Facility's completion and, therefore, no biosolids were available to apply to the reed beds. At that time, under no contractual obligation but as a sign of our commitment to the success of the project, CWG contributed to the cost of the Curlex III wood fiber blankets to protect the reed root structure over the winter, in the absence of biosolids.
- Providing written and verbal instructions to the City and its General Contractor, Gridor Construction, on recommended winter protocols following the reed planting.
- Providing written and verbal instructions including an Operation & Maintenance Guideline, and numerous follow-up phone calls and emails to the City's wastewater treatment operators and Gridor Construction regarding the recommended watering requirements for the initial growing season (spring 2016).
- Completing an on-site visit to the Mora WWTF on May 16, 2016.

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Present at the May 16, 2016 meeting were Scott Davis, Steve Rose, Joe Kohlgraf, Rodney Knudsen, and Ken Mattson. At the time of this visit, we observed the condition of the reeds and the current watering system, which had not been set up as we had specified and was operating on a limited basis over the prior few weeks. This grossly inadequate irrigation system was in direct violation of the requirements set forth in our addendum to our sub-contract agreement and clearly presented in our O & M guideline and follow-up written communications. While CWG could have voided the guarantee of the reeds at this time, in the spirit of good will and cooperation, we chose to exceed the scope of our contractual obligations to ensure the success of the partnership. These efforts ultimately resulted in healthy and established reed beds. The following is a timeline of key events:

- Commencing in June 2016 the Mora facility, at the recommendation of CWG, began to apply biosolids to the reed beds.
- From the onset of our involvement, it became quickly apparent that the digester capacity—previously established at the site without the input or approval of CWG—did not provide adequate retention time to reduce the volatile solids to CWG’s recommended limit of 70% as clearly stated in our O & M Guidelines and numerous written correspondence with the wastewater treatment plant operators. As CWG has made clear on numerous occasions, continued application of biosolids with volatile percentage above 70% compromises the efficacy of the reed bed system and compromises the conditions for optimum reed establishment and growth.
- In addition, CWG immediately identified that the surface area of the reed beds—also developed at the site without CWG’s input or approval—was inadequate for the volume of biosolids the facility sought to apply. As CWG has explained on numerous occasions, this results in oversaturation, another factor known to hinder the healthy establishment and growth of the reeds.

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- Primarily as a result of these design flaws and operational deficiencies, all of which are counter to CWG's recommendations and outlined protocols and parameters, healthy reed growth was predictably slower than optimal at the facility. To help address these challenges, CWG over the past three years has completed three additional plantings within the four reed beds.
- The reed beds were in a saturated condition following the winter of 2018/19, as a result of application of poorly stabilized biosolids (volatile solids well above the recommended 70%) As previously stated, these conditions inhibit reed emergence and growth due to oxygen deprivation of the root structure.
- The Mora operators began strictly adhering to a reduced hydraulic application rate and loading *interval, with* minimal application to the reed beds during the winter of 2019/20 and this entire growing season. (2020).
- This has resulted in a robust and healthy establishment of the native reeds throughout all four reed beds. As is to be expected, the maturity of the reeds varies to some degree from bed to bed, but all four are unquestionably well-established at this time.

Throughout this time, CWG has gone above and beyond in its services to ensure a successful partnership and project. We have also expressed that we are willing to provide two additional site visits at our own cost in January of 2021 and in the spring of 2021 once the reeds emerge to support the continued success at the facility. In over 40 years of business, we have always taken this approach and have seen all of our engagements through to their successful completion. It is our sincere hope that this project will be no different.

However, CWG will not be able to continue our work until payment, which is now overdue, is promptly made. As outlined above, it is our strong belief that CWG's work has exceeded our contractual



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obligations and that any decision to withhold or delay payment is not justified. To the extent this decision is based on a determination by the Mora City Engineer that the reed beds are still not established, based on extensive expertise in this regard, we adamantly refute that determination and would be happy to explain in further detail over the phone, should such an explanation be required.

Please advise immediately as to your decision regarding the overdue payment. Unfortunately, if not resolved in an expedient fashion, CWG will have no choice but to consider the legal remedies available to it.

We thank you for your prompt attention to this matter and look forward to continuing our partnership.

Sincerely,



A handwritten signature in black ink, appearing to read 'Jennifer Greene'.

Jennifer Greene
Principal

A handwritten signature in black ink, appearing to read 'Scott Davis'.

Scott Davis
Principal



Building a Better World
for All of Us®

November 12, 2020

RE: City of Mora, Minnesota
Reed Beds Site Visit
SEH No. MORA0 145879 14.00

Lindy Crawford
City Administrator
City of Mora
101 Lake Street South
Mora, MN 55055

Dear Ms. Crawford:

This memo is a follow up to the on-site visit of the reed beds on Wednesday, October 28th. Present at the site visit were you and Joe from the City, Sheryl Bock from the MPCA and Julia Bohnen from the U of M. Steve Lee from Gridor was not present to due quarantine.

The purpose of the site visit was to get a third-party opinion on reed establishment in the beds. It was Sheryl and Julia's position that there still are enough bare areas in beds 1, 2 & 3 to still be considered not established as is our position. It was discussed that it will likely be July before the reeds are growing enough next year to make another determination. It was suggested by Julia and Sheryl to have a drone fly over the beds and use mapping of the reeds and bare areas as a determination of establishment. It was agreed that at least 80% coverage should be used as the threshold of establishment.

We have drone ability inhouse and can perform the above task next summer. It was suggested that late July would likely be the best time to perform the flyover and mapping.

Steve Lee with Gridor, the WWTP contractor, submitted a letter dated November 3, 2020 for the PUC meeting on Monday, November 16. In his letter Mr. Lee contents that the slow growth/lack of reed establishment is tied to the Volatile Solids Content (VOC) of the sludge being placed on the beds by the City being over 70%. Sludge with VOC over 70% is not recommended by Constructed Wetlands Group (CWG) for placement on the beds. The construction documents for the reed bed construction also noted that VOC's should be under 70%.

In Mr. Lee's letter he notes the reeds did make "significant progress this year,". We agree that the reeds showed significant growth over the second half of the summer in beds 1, 2 & 3. It has been discussed before that bed 4 has reached establishment. Bed 4 has generally had the same reed growth amount for the past two summers. It should be noted that bed 4 was the first bed planted during construction of the reed beds. The watering of beds 1, 2 and 3 was not done in the same fashion as bed 4. It is our contention the change in watering effort of beds 1, 2 and 3 during their planting remains the cause of those beds not reaching establishment as bed 4 has.

Mr. Lee's letter notes that continued placement of sludge with a VOC over 70% on the reed beds is a concern for the long-term health of the reeds. By Mr. Lee's own admission, this summer was the best

growth we've seen in beds 1, 2 & 3, but this summer also saw the highest continued discharge of sludge over 70% in VOC. Seems like those two facts could not coexist.

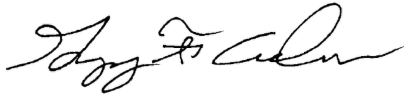
Sludge data provided by the City from May 2018 through summer of 2018 showed that VOC percentage of the sludge varies during that time from the low 60's to the mid 70's. Sludge data from 2020 shows it consistently over 70%, yet this summer saw the best growth in beds 1, 2 and 3. This doesn't follow with Gridor and CWG's concern that VOC's greater than 70% will harm the reeds.

Gridor and CWG are asking for project closeout and issuance of final payment at this time. They say that if final payment is made, CWG will make two more visits to the plant to review and comment on the reed growth. By closing out the project, the City has no guarantee that CWG will make two more visits. There would be no contractual obligation for them to do that. CWG's track record of responsiveness on the project has been inconsistent at best. Mr. Lee comments on CWG's' responsiveness in his letter. If the City closes the project out and issues final payment, what guarantee does the City have of CWG returning for two visits given their track record?

My recommendation is that the beds be reviewed again next summer, and we utilize a drone to map the reed growth in beds 1, 2 and 3. At that time, a determination of establishment can be made.

Sincerely,

SHORT ELLIOTT HENDRICKSON INC.



Greg F. Anderson PE
City Engineer
(Lic. MN)

ah

c: Joe Kohlgraf, City of Mora



MEMORANDUM

Date: November 16, 2020
To: Public Utilities Commission
From: Lindy Crawford, Public Utilities General Manager
Sara King, Accountant
RE: Proposed 2021 Budget and Utility Rates

SUMMARY

The PUC will review the proposed 2021 utility budgets and rate changes. The budget must be adopted on or before the December 14, 2020 PUC meeting.

BACKGROUND INFORMATION

Attached for review and consideration are the proposed 2021 utility budgets. Significant factors resulting in a proposed electric rate increase include:

Significant Expenditure changes in 2021

1. 3% COLA increase based on previously approved collective bargaining agreements.
2. 9% health insurance increase.
3. An increase in uniform expenses for the purchase of fire retardant (FR) clothing in the electric department.
4. Well improvement projects.
5. Painting the exterior of the water treatment plant.
6. An increase in auditing expenses.
7. Increase in cleaning supplies due to COVID-19.
8. The addition of a Plant/Line Manager position.

Significant Revenue changes in 2021

1. Interest, dividends and penalties continue to generate less revenue.
2. A slight increase in antenna lease revenue.

Capital Improvement Plan

In addition to the operating budget MMU has a capital improvement plan (CIP). Prior to 2020, we had not replaced some capital assets and/or equipment necessary to provide services and complete projects. Because of this we are still faced with playing “catch up”. Items that are included in the CIP for 2021 are as follows, in order of expense:

- Electric rate structure study.
- Mower replacement for the WWTP.
- Airport lift station panel replacement.
- Electric service truck – specific to proposed new Plant/Line Manager employee.
- Controls for Well #4.
- Electric overhead tree maintenance program – ongoing from 2020.

Memorandum

- Electric pole replacement program – new and ongoing beyond 2024.
- Heavy duty electric service truck – specific to proposed new Plant/Line Manager employee.

In order to keep utility rate increases low or at zero staff is proposing to use reserve funds from each fund.

- From Electric \$263,700 to offset costs in the electric fund.
- From Water \$180,820 to offset costs in the water fund.
- From Sewer \$330,075 to offset costs in the sewer fund.

Staff analyzed the impact of a proposed rate increase of 4.25% for electric. The impact is shown below on an average monthly household utility bill. The impact to an average residential utility customer for the proposed rate increases in 2021, including stormwater, would be \$5.92 per month (\$71.04 for the year) or 2.57%. The electric rate increase will be used to cover \$225,000 in expenses for overhead tree maintenance and pole replacement programs – programs that benefit all customers.

| Impact of 2021 Proposed Rates on an Average Monthly Household Utility Bill | | | | | | | |
|--|-------|-------|--------|--------|----------|----------|--|
| Service Charge | Usage | Units | 2020 | 2021 | Increase | Increase | |
| 1 ELECTRIC RES | 1040 | kWh | 108.31 | 112.91 | 4.60 | 4.25% | |
| 20 WATER RES | 5000 | gal. | 44.42 | 44.42 | - | 0.00% | |
| 23 TEST FEE-WATER | 1 | fee | 0.81 | 0.81 | - | | |
| 30 SEWER RES | 5000 | gal. | 58.77 | 58.77 | - | 0.00% | |
| 71 STORM WATER | 1 | fee | 5.00 | 5.75 | 0.75 | 15.00% | |
| 2 ELEC TAX | | | 7.99 | 8.33 | 0.34 | | |
| 4 FRANCHISE FEE TO CITY | | | 5.42 | 5.65 | 0.23 | | |
| | | | 230.71 | 236.64 | 5.92 | 2.57% | |

Annually, the PUC reviews and adopts the upcoming year’s fee schedule at the December meeting. This year staff will be proposing the addition of construction charges to cover the cost of staff time to process applications and complete connections.

OPTIONS & IMPACTS

1. Review and amend the 2021 proposed budget and utility rates.
 - a. Suggest areas/projects that could be increased/decreased for 2021. Increasing line items increases utility rates. Decreasing line items does not eliminate them from future budget years. Rather, it puts more burden on future budget years resulting in larger utility rate increases in the future.
2. Review and recommend approval of the 2021 proposed budget and utility rates.
 - a. Formal approval may occur at this PUC meeting or it may wait until the December meeting. Staff recommends waiting until a later meeting.

RECOMMENDATIONS

Review and discuss the 2021 proposed budget and utility rates, and direct staff appropriately.

Memorandum

Attachments

2021 Preliminary Budget Expenditures & Revenues

2021 Capital Improvement Plan



CITY OF MORA
Preliminary Budget - Revenue - Utilities

Current Period: November 2020

Budget-2021

Preliminary

| Last Dimension | 2018 Amount | 2019 Budget | 2019 Amount | 2020 Budget | 2020 YTD Amount | 2021 Budget | Diff From Current |
|----------------------------------|----------------|----------------|----------------|----------------|--------------------|----------------|----------------------|
| FUND 651 ELECTRIC FUND | | | | | | | |
| Dept 49530 ELECTRIC ADMIN | \$5,811,654.32 | \$5,818,704.00 | \$6,093,973.90 | \$5,927,828.00 | \$4,584,620.88 | \$6,098,216.00 | \$170,388.00 |
| FUND 651 ELECTRIC FUND | \$5,811,654.32 | \$5,818,704.00 | \$6,093,973.90 | \$5,927,828.00 | \$4,584,620.88 | \$6,098,216.00 | \$170,388.00 |



CITY OF MORA

Preliminary Budget - Revenue - Utilities

Current Period: November 2020

Budget-2021

Preliminary

| Last Dimension | 2018 Amount | 2019 Budget | 2019 Amount | 2020 Budget | 2020 YTD Amount | 2021 Budget | Diff From Current |
|----------------------------------|----------------|----------------|----------------|----------------|--------------------|----------------|----------------------|
| FUND 652 WATER FUND | | | | | | | |
| Dept 49440 WATER ADMINIST | \$773,714.24 | \$734,298.00 | \$822,238.12 | \$952,650.00 | \$686,722.95 | \$791,278.00 | -\$161,372.00 |
| FUND 652 WATER FUND | \$773,714.24 | \$734,298.00 | \$822,238.12 | \$952,650.00 | \$686,722.95 | \$791,278.00 | -\$161,372.00 |



CITY OF MORA

Preliminary Budget - Revenue - Utilities

Current Period: November 2020

Budget-2021

Preliminary

| Last Dimension | 2018 Amount | 2019 Budget | 2019 Amount | 2020 Budget | 2020 YTD Amount | 2021 Budget | Diff From Current |
|----------------------------------|----------------|----------------|----------------|----------------|--------------------|----------------|----------------------|
| FUND 653 SEWER FUND | | | | | | | |
| Dept 49490 SEWER ADMINIST | \$1,110,230.10 | \$1,045,584.00 | \$1,208,536.27 | \$1,065,400.00 | \$935,032.86 | \$1,073,295.00 | \$7,895.00 |
| FUND 653 SEWER FUND | \$1,110,230.10 | \$1,045,584.00 | \$1,208,536.27 | \$1,065,400.00 | \$935,032.86 | \$1,073,295.00 | \$7,895.00 |



CITY OF MORA

Preliminary Budget - Expenditures - Utilities

Current Period: November 2020

Budget-2021

Preliminary

| Last Dimension | 2018 Amount | 2019 Budget | 2019 Amount | 2020 Budget | 2020 YTD Amount | 2021 Budget | Diff From Current |
|------------------------------------|----------------|----------------|----------------|----------------|--------------------|----------------|----------------------|
| FUND 651 ELECTRIC FUND | | | | | | | |
| Dept 49510 GENERATION & | \$4,405,814.98 | \$4,663,064.00 | \$4,082,872.36 | \$4,695,631.00 | \$3,278,095.73 | \$4,678,397.00 | -\$17,234.00 |
| Dept 49515 LANDFILL GENE | \$90,168.88 | \$96,382.00 | \$98,519.96 | \$101,931.00 | \$80,891.02 | \$99,148.00 | -\$2,783.00 |
| Dept 49520 ELECTRIC DISTR | \$383,343.80 | \$445,077.00 | \$314,331.94 | \$451,073.00 | \$370,447.77 | \$477,143.00 | \$26,070.00 |
| Dept 49530 ELECTRIC ADMI | \$865,404.27 | \$589,083.00 | \$707,265.63 | \$767,278.00 | \$439,799.20 | \$584,197.00 | -\$183,081.00 |
| FUND 651 ELECTRIC FUND | \$5,744,731.93 | \$5,793,606.00 | \$5,202,989.89 | \$6,015,913.00 | \$4,169,233.72 | \$5,838,885.00 | -\$177,028.00 |



CITY OF MORA

Preliminary Budget - Expenditures - Utilities

Current Period: November 2020

Budget-2021

Preliminary

| Last Dimension | 2018 Amount | 2019 Budget | 2019 Amount | 2020 Budget | 2020 YTD Amount | 2021 Budget | Diff From Current |
|---------------------------------|----------------|----------------|----------------|----------------|--------------------|----------------|----------------------|
| FUND 652 WATER FUND | | | | | | | |
| Dept 49410 WATER SUPPLY | \$35,554.52 | \$62,166.00 | \$18,965.76 | \$64,545.00 | \$34,033.89 | \$106,604.00 | \$42,059.00 |
| Dept 49420 WATER TREATME | \$85,317.75 | \$112,483.00 | \$99,942.02 | \$123,168.00 | \$83,586.00 | \$122,978.00 | -\$190.00 |
| Dept 49430 WATER DISTRIB | \$83,033.20 | \$72,499.00 | \$117,300.26 | \$80,449.00 | \$94,203.32 | \$78,673.00 | -\$1,776.00 |
| Dept 49440 WATER ADMINIS | \$546,626.13 | \$485,127.00 | \$491,056.93 | \$508,531.00 | \$381,838.19 | \$491,758.00 | -\$16,773.00 |
| FUND 652 WATER FUND | \$750,531.60 | \$732,275.00 | \$727,264.97 | \$776,693.00 | \$593,661.40 | \$800,013.00 | \$23,320.00 |



CITY OF MORA

Preliminary Budget - Expenditures - Utilities

Current Period: November 2020

Budget-2021

Preliminary

| Last Dimension | 2018 Amount | 2019 Budget | 2019 Amount | 2020 Budget | 2020 YTD Amount | 2021 Budget | Diff From Current |
|----------------------------------|----------------|----------------|----------------|----------------|--------------------|----------------|----------------------|
| FUND 653 SEWER FUND | | | | | | | |
| Dept 49460 SEWER COLLECT | \$47,828.75 | \$68,153.00 | \$58,785.89 | \$73,192.00 | \$59,559.24 | \$70,457.00 | -\$2,735.00 |
| Dept 49463 QUAMBA COLLEC | \$1,535.61 | \$5,609.00 | \$4,069.44 | \$7,864.00 | \$841.84 | \$14,022.00 | \$6,158.00 |
| Dept 49470 SEWER LIFT STA | \$30,914.93 | \$33,413.00 | \$61,034.91 | \$41,495.00 | \$28,548.75 | \$75,323.00 | \$33,828.00 |
| Dept 49480 WASTEWATER T | \$244,416.35 | \$331,992.00 | \$346,885.86 | \$328,778.00 | \$228,857.63 | \$318,801.00 | -\$9,977.00 |
| Dept 49490 SEWER ADMINIS | \$815,554.17 | \$677,895.00 | \$675,460.96 | \$696,859.00 | \$523,286.55 | \$668,485.00 | -\$28,374.00 |
| FUND 653 SEWER FUND | \$1,140,249.81 | \$1,117,062.00 | \$1,146,237.06 | \$1,148,188.00 | \$841,094.01 | \$1,147,088.00 | -\$1,100.00 |

City of Mora, Minnesota
Capital Improvement Program
 2021 thru 2025

PROJECTS BY DEPARTMENT

| Department | Project # | Priority | 2021 | 2022 | 2023 | 2024 | 2025 | Total |
|--|--------------|----------|----------------|----------------|----------------|----------------|----------------|------------------|
| 9440 - Water | | | | | | | | |
| Well # 4 Controls | 9440-2020-01 | 3 | 55,000 | | | | | 55,000 |
| 9440 - Water Total | | | 55,000 | | | | | 55,000 |
| 9490 - Sewer | | | | | | | | |
| Water/Sewer Service Truck Replacement | 9490-2019-02 | 4 | | | 34,000 | | | 34,000 |
| Water/Sewer Service Truck Replacement | 9490-2019-03 | 4 | | | | 38,000 | | 38,000 |
| Water/Sewer Heavy Duty Service Truck Replacement | 9490-2019-05 | 4 | | 105,000 | | | | 105,000 |
| Sewer Jet/Vac Truck Replacement | 9490-2019-06 | 3 | | | | | 325,000 | 325,000 |
| WWTP Mower Replacement | 9490-2019-09 | 2 | 30,000 | | | | | 30,000 |
| WWTP Cold Storage Conversion | 9490-2019-10 | 4 | | | | 110,000 | | 110,000 |
| Aeration Blower | 9490-2020-01 | 3 | | 90,000 | | | | 90,000 |
| Airport Lift Station Panel Replacement | 9490-2020-03 | 2 | 35,000 | | | | | 35,000 |
| 9490 - Sewer Total | | | 65,000 | 195,000 | 34,000 | 148,000 | 325,000 | 767,000 |
| 9530 - Electric | | | | | | | | |
| Elec Dept Bucket Truck Replacement | 9530-2019-01 | 3 | | | | | 140,000 | 140,000 |
| Elec Dept Service Truck Replacement | 9530-2019-03 | 3 | | 35,000 | | | | 35,000 |
| Elec Dept Service Truck Replacement | 9530-2019-04 | 3 | | | | 30,000 | | 30,000 |
| Power Plant Yard Improvements | 9530-2019-10 | 3 | | | 30,000 | | | 30,000 |
| Elec Dept Overhead Tree Maintenance | 9530-2019-11 | 2 | 75,000 | | | | | 75,000 |
| Elec Dept Overhead Tree Maintenance | 9530-2019-12 | 2 | | 75,000 | 75,000 | | | 150,000 |
| Electric Pole Replacement Project | 9530-2020-01 | 1 | 150,000 | 75,000 | 75,000 | 75,000 | | 375,000 |
| New Heavy Duty Bucket Truck | 9530-2020-02 | 2 | 250,000 | | | | | 250,000 |
| New Electric Service Truck - Half-Ton | 9530-2020-03 | 2 | 43,000 | | | | | 43,000 |
| Electric Rate Structure Study | 9530-2020-04 | 2 | 15,000 | | | | | 15,000 |
| 9530 - Electric Total | | | 533,000 | 185,000 | 180,000 | 105,000 | 140,000 | 1,143,000 |
| GRAND TOTAL | | | 653,000 | 380,000 | 214,000 | 253,000 | 465,000 | 1,965,000 |

MORA MUNICIPAL UTILITIES



Financial Reports

Electric Fund
Water Fund
Sewer Fund

September 30, 2020
[unaudited]

TABLE OF CONTENTS

| | |
|--|--|
| Fund Budgetary Performance | |
| Balance Sheet – Electric Fund | |
| Balance Sheet – Water Fund | |
| Balance Sheet – Sewer Fund | |
| Graphical Presentation – Electric Fund | |
| Graphical Presentation – Water Fund | |
| Graphical Presentation – Sewer Fund | |
| Investment Portfolio | |
| Outstanding Debt | |
| Revenue Guideline Report | |
| Expenditure Guideline Report | |
| Notes | |

MORA MUNICIPAL UTILITIES

Fund Budgetary Performance

For the Quarter Ended September 30, 2020

| | 2020 YTD Budget | 2020 YTD Actual | 2020 YTD Balance | 2020 % YTD Budget |
|------------------------|--------------------|--------------------|---------------------|----------------------|
| ELECTRIC FUND | | | | |
| Revenues | 5,927,828 | 4,174,279 | 1,753,549 | 70.42% |
| Expenditures | 6,015,913 | 3,796,564 | 2,219,349 | 63.11% |
| Surplus/(Deficit) | | 377,715 | | |
| WATER FUND | | | | |
| Revenues | 952,650 | 620,108 | 332,542 | 65.09% |
| Expenditures | 776,693 | 563,340 | 213,353 | 72.53% |
| Surplus/(Deficit) | | 56,768 | | |
| SEWER FUND | | | | |
| Revenues | 1,065,400 | 848,029 | 217,371 | 79.60% |
| Expenditures | 1,148,188 | 792,243 | 355,945 | 69.00% |
| Surplus/(Deficit) | | 55,786 | | |
| TOTAL ALL FUNDS | | | | |
| Revenues | 7,945,878 | 5,642,416 | 2,303,462 | 71.01% |
| Expenditures | 7,940,794 | 5,152,147 | 2,788,647 | 64.88% |
| Surplus/(Deficit) | | 490,269 | | |



CITY OF MORA
BALANCE SHEET
 Current Period: September 2020

Year End

| Account Descr | Begin Yr | YTD Debit | YTD Credit | Current Balance |
|--|------------------------|------------------------|------------------------|------------------------|
| Fund 651 ELECTRIC FUND | | | | |
| Bal Type A | | | | |
| G 651-11011 Cash NNB Checking | \$1,344,478.28 | \$4,505,065.73 | \$4,404,337.02 | \$1,445,206.99 |
| G 651-11013 Petty Cash | \$0.00 | \$0.00 | \$0.00 | \$0.00 |
| G 651-11014 ChangeFund/AirportVending/N | \$400.00 | \$0.00 | \$0.00 | \$400.00 |
| G 651-11018 Cash FCB HI-FI | \$602,842.58 | \$11,937.68 | \$0.00 | \$614,780.26 |
| G 651-11020 Investments | \$4,911,640.22 | \$124,487.56 | \$0.00 | \$5,036,127.78 |
| G 651-11022 Spire Savings | \$0.00 | \$0.00 | \$0.00 | \$0.00 |
| G 651-11041 Interest Receivable | \$24,427.07 | \$0.00 | \$0.00 | \$24,427.07 |
| G 651-11151 Accounts Receivable | \$41,373.69 | \$299,608.20 | \$306,909.64 | \$34,072.25 |
| G 651-11152 Accounts Receivable - UB | \$359,758.23 | \$4,256,370.25 | \$3,984,420.02 | \$631,708.46 |
| G 651-11154 Return Checks | \$0.00 | \$184,581.53 | \$184,581.53 | \$0.00 |
| G 651-11155 Accounts Rec - Other | \$0.00 | \$0.00 | \$0.00 | \$0.00 |
| G 651-11212 Special Assess Rec - Unamort | \$0.00 | \$0.00 | \$0.00 | \$0.00 |
| G 651-11213 Special Assess Rec - Amortized | \$0.00 | \$0.00 | \$0.00 | \$0.00 |
| G 651-11410 Distribution Inventory | \$131,986.04 | \$26,185.44 | \$0.00 | \$158,171.48 |
| G 651-11551 Prepaid Ins | \$0.00 | \$45,348.89 | \$34,011.63 | \$11,337.26 |
| G 651-12600 Fixed Assets | \$5,892,294.31 | \$32,423.90 | \$0.00 | \$5,924,718.21 |
| G 651-12601 Allowance for Depreciation | -\$3,924,774.35 | \$0.00 | \$130,332.35 | -\$4,055,106.70 |
| G 651-12647 Construction in Progress | \$0.00 | \$0.00 | \$0.00 | \$0.00 |
| G 651-13300 Advance To Wood & Grove Fu | \$525,394.92 | \$0.00 | \$15,710.90 | \$509,684.02 |
| G 651-13305 Advance To Water Fund | \$150,464.44 | \$0.00 | \$4,499.34 | \$145,965.10 |
| G 651-13310 Advance To Sewer Fund | \$144,557.45 | \$0.00 | \$4,322.71 | \$140,234.74 |
| G 651-13315 Advance To Fire Station Proj F | \$0.00 | \$0.00 | \$0.00 | \$0.00 |
| G 651-13320 Advance To Liquor Fund | \$1,000,000.00 | \$0.00 | \$0.00 | \$1,000,000.00 |
| G 651-13325 Advance To TIF District 1-11 | \$209,537.44 | \$0.00 | \$5,165.08 | \$204,372.36 |
| G 651-15600 Deferred Outflow - Pensions | \$39,084.00 | \$0.00 | \$0.00 | \$39,084.00 |
| G 651-15650 Deferred Outflow - OPEB | \$3,567.00 | \$0.00 | \$0.00 | \$3,567.00 |
| Bal Type A | \$11,457,031.32 | \$9,486,009.18 | \$9,074,290.22 | \$11,868,750.28 |
| Bal Type E | | | | |
| G 651-24204 Fund Bal-Undes/Net Asset (ent | -\$9,691,189.90 | \$3,815,794.36 | \$4,193,508.98 | \$10,068,904.52 |
| G 651-24502 FB/Net Asset-Des Cap Proj/De | -\$1,000,000.00 | \$0.00 | \$0.00 | -\$1,000,000.00 |
| Bal Type E | \$10,691,189.90 | \$3,815,794.36 | \$4,193,508.98 | \$11,068,904.52 |
| Bal Type L | | | | |
| G 651-21500 Accrued Interest Payable | \$0.00 | \$0.00 | \$0.00 | \$0.00 |
| G 651-21600 Accrued Wages/Salaries Payab | -\$14,322.67 | \$0.00 | \$0.00 | -\$14,322.67 |
| G 651-22021 Accounts Payable | -\$291,272.76 | \$2,852,726.60 | \$2,866,215.94 | -\$304,762.10 |
| G 651-22050 Franchise Fee Payable | \$0.00 | \$175,683.39 | \$175,683.39 | \$0.00 |
| G 651-22082 Sales Tax Payable | -\$13,261.00 | \$158,182.11 | \$167,059.23 | -\$22,138.12 |
| G 651-22161 Accrued Vac-Sick Wages | -\$25,711.13 | \$0.00 | \$0.00 | -\$25,711.13 |
| G 651-22190 OPEB Liability | -\$32,239.00 | \$0.00 | \$0.00 | -\$32,239.00 |
| G 651-22201 Deposits | -\$52,800.00 | \$12,210.00 | \$20,710.00 | -\$61,300.00 |
| G 651-22202 Deposits - Other | -\$200.00 | \$0.00 | \$0.00 | -\$200.00 |
| G 651-22223 Deferred Revenues | \$0.00 | \$0.00 | \$0.00 | \$0.00 |
| G 651-22250 Undistributed Receipts (UR) | -\$14,883.86 | \$53,632.02 | \$55,993.90 | -\$17,245.74 |
| G 651-22850 EFT Clearing Account | \$0.00 | \$996.95 | \$1,772.95 | -\$776.00 |
| G 651-23000 Net Pension Liability | -\$268,476.00 | \$0.00 | \$0.00 | -\$268,476.00 |
| G 651-23500 Deferred Inflow - Pensions | -\$52,675.00 | \$0.00 | \$0.00 | -\$52,675.00 |
| Bal Type L | -\$765,841.42 | \$3,253,431.07 | \$3,287,435.41 | -\$799,845.76 |
| Fund 651 ELECTRIC FUND | \$0.00 | \$16,555,234.61 | \$16,555,234.61 | \$0.00 |



CITY OF MORA
BALANCE SHEET
 Current Period: September 2020

Year End

| Account Descr | Begin Yr | YTD Debit | YTD Credit | Current Balance |
|--|------------------------|-----------------------|-----------------------|------------------------|
| Fund 652 WATER FUND | | | | |
| Bal Type A | | | | |
| G 652-11011 Cash NNB Checking | \$392,794.34 | \$599,714.67 | \$523,772.88 | \$468,736.13 |
| G 652-11012 INV-Restr Cap Imp/Debt-K/W/ | \$37,244.53 | \$101.35 | \$0.00 | \$37,345.88 |
| G 652-11018 Cash FCB HI-FI | \$73,258.86 | \$199.35 | \$5,251.67 | \$68,206.54 |
| G 652-11020 Investments | \$627,962.62 | \$15,915.96 | \$0.00 | \$643,878.58 |
| G 652-11041 Interest Receivable | \$3,123.05 | \$0.00 | \$0.00 | \$3,123.05 |
| G 652-11151 Accounts Receivable | \$369.17 | \$5,563.58 | \$5,916.11 | \$16.64 |
| G 652-11152 Accounts Receivable - UB | \$115,229.01 | \$626,607.56 | \$602,301.60 | \$139,534.97 |
| G 652-11154 Return Checks | \$0.00 | \$0.00 | \$0.00 | \$0.00 |
| G 652-11155 Accounts Rec - Other | \$0.00 | \$0.00 | \$0.00 | \$0.00 |
| G 652-11212 Special Assess Rec - Unamort | \$36,404.31 | \$0.00 | \$2,069.29 | \$34,335.02 |
| G 652-11213 Special Assess Rec - Amortized | \$0.00 | \$0.00 | \$0.00 | \$0.00 |
| G 652-11420 Inventory Materials/Supplies | \$4,246.02 | \$10,238.66 | \$0.00 | \$14,484.68 |
| G 652-11551 Prepaid Ins | \$0.00 | \$12,920.81 | \$9,690.66 | \$3,230.15 |
| G 652-12600 Fixed Assets | \$7,748,401.65 | \$79,262.59 | \$3,300.00 | \$7,824,364.24 |
| G 652-12601 Allowance for Depreciation | -\$3,964,833.57 | \$0.00 | \$243,558.11 | -\$4,208,391.68 |
| G 652-15600 Deferred Outflow - Pensions | \$18,042.00 | \$0.00 | \$0.00 | \$18,042.00 |
| G 652-15650 Deferred Outflow - OPEB | \$1,743.00 | \$0.00 | \$0.00 | \$1,743.00 |
| Bal Type A | \$5,093,984.99 | \$1,350,524.53 | \$1,395,860.32 | \$5,048,649.20 |
| Bal Type E | | | | |
| G 652-24204 Fund Bal-Undes/Net Asset (ent | -\$3,518,066.75 | \$588,197.90 | \$644,965.95 | -\$3,574,834.80 |
| G 652-24502 FB/Net Asset-Des Cap Proj/De | -\$100,000.00 | \$0.00 | \$0.00 | -\$100,000.00 |
| Bal Type E | -\$3,618,066.75 | \$588,197.90 | \$644,965.95 | -\$3,674,834.80 |
| Bal Type L | | | | |
| G 652-20900 Advance From Electric Fund | -\$150,464.44 | \$4,499.34 | \$0.00 | -\$145,965.10 |
| G 652-21500 Accrued Interest Payable | -\$8,444.68 | \$0.00 | \$0.00 | -\$8,444.68 |
| G 652-21600 Accrued Wages/Salaries Payab | -\$7,334.80 | \$0.00 | \$0.00 | -\$7,334.80 |
| G 652-22021 Accounts Payable | \$0.00 | \$0.00 | \$0.00 | \$0.00 |
| G 652-22026 State Water Fee | -\$0.39 | \$8,662.00 | \$8,661.97 | -\$0.36 |
| G 652-22031 Bonds Payable | -\$1,129,854.00 | \$98,182.00 | \$0.00 | -\$1,031,672.00 |
| G 652-22034 Unamortized Premium on Bon | -\$1,716.54 | \$0.00 | \$0.00 | -\$1,716.54 |
| G 652-22082 Sales Tax Payable | -\$670.00 | \$7,788.48 | \$8,166.01 | -\$1,047.53 |
| G 652-22161 Accrued Vac-Sick Wages | -\$13,277.39 | \$0.00 | \$0.00 | -\$13,277.39 |
| G 652-22190 OPEB Liability | -\$15,755.00 | \$0.00 | \$0.00 | -\$15,755.00 |
| G 652-22201 Deposits | -\$150.00 | \$100.00 | \$300.00 | -\$350.00 |
| G 652-22223 Deferred Revenues | \$0.00 | \$0.00 | \$0.00 | \$0.00 |
| G 652-22850 EFT Clearing Account | \$0.00 | \$0.00 | \$0.00 | \$0.00 |
| G 652-22860 Edgewood Tenant Rent Collect | \$0.00 | \$0.00 | \$0.00 | \$0.00 |
| G 652-23000 Net Pension Liability | -\$123,935.00 | \$0.00 | \$0.00 | -\$123,935.00 |
| G 652-23500 Deferred Inflow - Pensions | -\$24,316.00 | \$0.00 | \$0.00 | -\$24,316.00 |
| Bal Type L | -\$1,475,918.24 | \$119,231.82 | \$17,127.98 | -\$1,373,814.40 |
| Fund 652 WATER FUND | \$0.00 | \$2,057,954.25 | \$2,057,954.25 | \$0.00 |



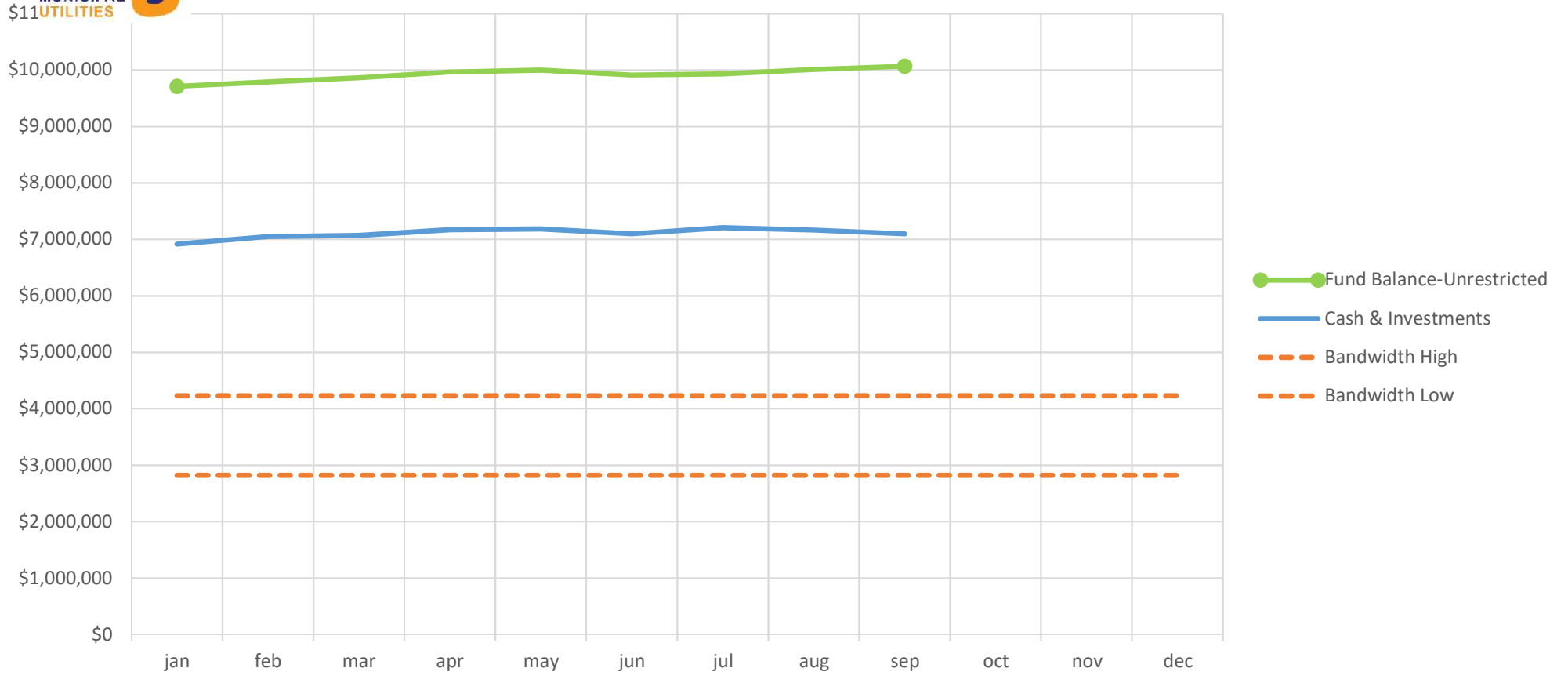
CITY OF MORA
BALANCE SHEET
 Current Period: September 2020

Year End

| Account Descr | Begin Yr | YTD Debit | YTD Credit | Current Balance |
|--|------------------------|-----------------------|-----------------------|------------------------|
| Fund 653 SEWER FUND | | | | |
| Bal Type A | | | | |
| G 653-11011 Cash NNB Checking | \$533,821.36 | \$867,857.51 | \$646,820.41 | \$754,858.46 |
| G 653-11018 Cash FCB HI-FI | \$645,105.88 | \$1,755.54 | \$5,045.49 | \$641,815.93 |
| G 653-11020 Investments | \$1,583,819.24 | \$40,142.56 | \$0.00 | \$1,623,961.80 |
| G 653-11041 Interest Receivable | \$7,876.81 | \$0.00 | \$0.00 | \$7,876.81 |
| G 653-11151 Accounts Receivable | \$58,865.99 | \$2,565.00 | \$61,430.99 | \$0.00 |
| G 653-11152 Accounts Receivable - UB | \$100,300.88 | \$805,497.73 | \$781,245.85 | \$124,552.76 |
| G 653-11155 Accounts Rec - Other | \$0.00 | \$0.00 | \$0.00 | \$0.00 |
| G 653-11212 Special Assess Rec - Unamort | \$0.00 | \$0.00 | \$0.00 | \$0.00 |
| G 653-11213 Special Assess Rec - Amortized | \$0.00 | \$0.00 | \$0.00 | \$0.00 |
| G 653-11551 Prepaid Ins | \$0.00 | \$23,170.00 | \$17,377.47 | \$5,792.53 |
| G 653-12600 Fixed Assets | \$13,698,632.82 | \$22,281.39 | \$0.00 | \$13,720,914.21 |
| G 653-12601 Allowance for Depreciation | -\$5,583,574.84 | \$0.00 | \$356,024.70 | -\$5,939,599.54 |
| G 653-12647 Construction in Progress | \$20,000.00 | \$0.00 | \$0.00 | \$20,000.00 |
| G 653-15600 Deferred Outflow - Pensions | \$26,582.00 | \$0.00 | \$0.00 | \$26,582.00 |
| G 653-15650 Deferred Outflow - OPEB | \$2,654.00 | \$0.00 | \$0.00 | \$2,654.00 |
| Bal Type A | \$11,094,084.14 | \$1,763,269.73 | \$1,867,944.91 | \$10,989,408.96 |
| Bal Type E | | | | |
| G 653-24204 Fund Bal-Undes/Net Asset (ent | -\$7,523,134.59 | \$819,569.34 | \$875,355.62 | -\$7,578,920.87 |
| G 653-24502 FB/Net Asset-Des Cap Proj/De | -\$220,000.00 | \$0.00 | \$0.00 | -\$220,000.00 |
| Bal Type E | -\$7,743,134.59 | \$819,569.34 | \$875,355.62 | -\$7,798,920.87 |
| Bal Type L | | | | |
| G 653-20610 Contracts Payable - Retainage | -\$20,000.00 | \$0.00 | \$0.00 | -\$20,000.00 |
| G 653-20900 Advance From Electric Fund | -\$144,557.45 | \$4,322.71 | \$0.00 | -\$140,234.74 |
| G 653-21500 Accrued Interest Payable | -\$11,681.68 | \$0.00 | \$0.00 | -\$11,681.68 |
| G 653-21600 Accrued Wages/Salaries Payab | -\$9,284.21 | \$0.00 | \$0.00 | -\$9,284.21 |
| G 653-22021 Accounts Payable | \$0.00 | \$0.00 | \$0.00 | \$0.00 |
| G 653-22027 Quamba Payable-Reserve & D | -\$3,554.00 | \$3.00 | \$10,640.00 | -\$14,191.00 |
| G 653-22031 Bonds Payable | -\$2,898,608.75 | \$176,233.56 | \$9,457.81 | -\$2,731,833.00 |
| G 653-22034 Unamortized Premium on Bon | -\$872.24 | \$0.00 | \$0.00 | -\$872.24 |
| G 653-22082 Sales Tax Payable | \$0.00 | \$0.00 | \$0.00 | \$0.00 |
| G 653-22161 Accrued Vac-Sick Wages | -\$19,986.22 | \$0.00 | \$0.00 | -\$19,986.22 |
| G 653-22190 OPEB Liability | -\$23,984.00 | \$0.00 | \$0.00 | -\$23,984.00 |
| G 653-22223 Deferred Revenues | \$0.00 | \$0.00 | \$0.00 | \$0.00 |
| G 653-23000 Net Pension Liability | -\$182,596.00 | \$0.00 | \$0.00 | -\$182,596.00 |
| G 653-23500 Deferred Inflow - Pensions | -\$35,825.00 | \$0.00 | \$0.00 | -\$35,825.00 |
| Bal Type L | -\$3,350,949.55 | \$180,559.27 | \$20,097.81 | -\$3,190,488.09 |
| Fund 653 SEWER FUND | \$0.00 | \$2,763,398.34 | \$2,763,398.34 | \$0.00 |

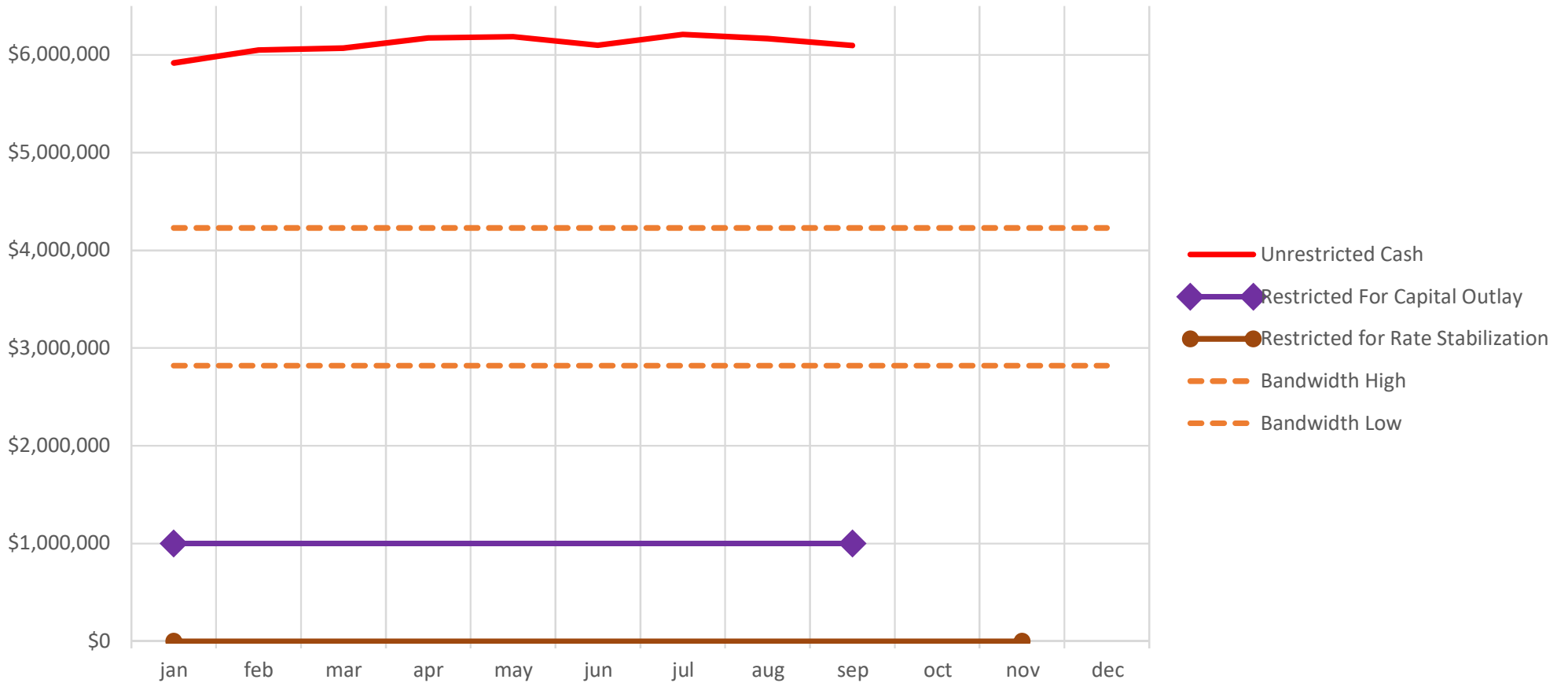


ELECTRIC FUND - 2020 Cash & Investments/Fund Balance



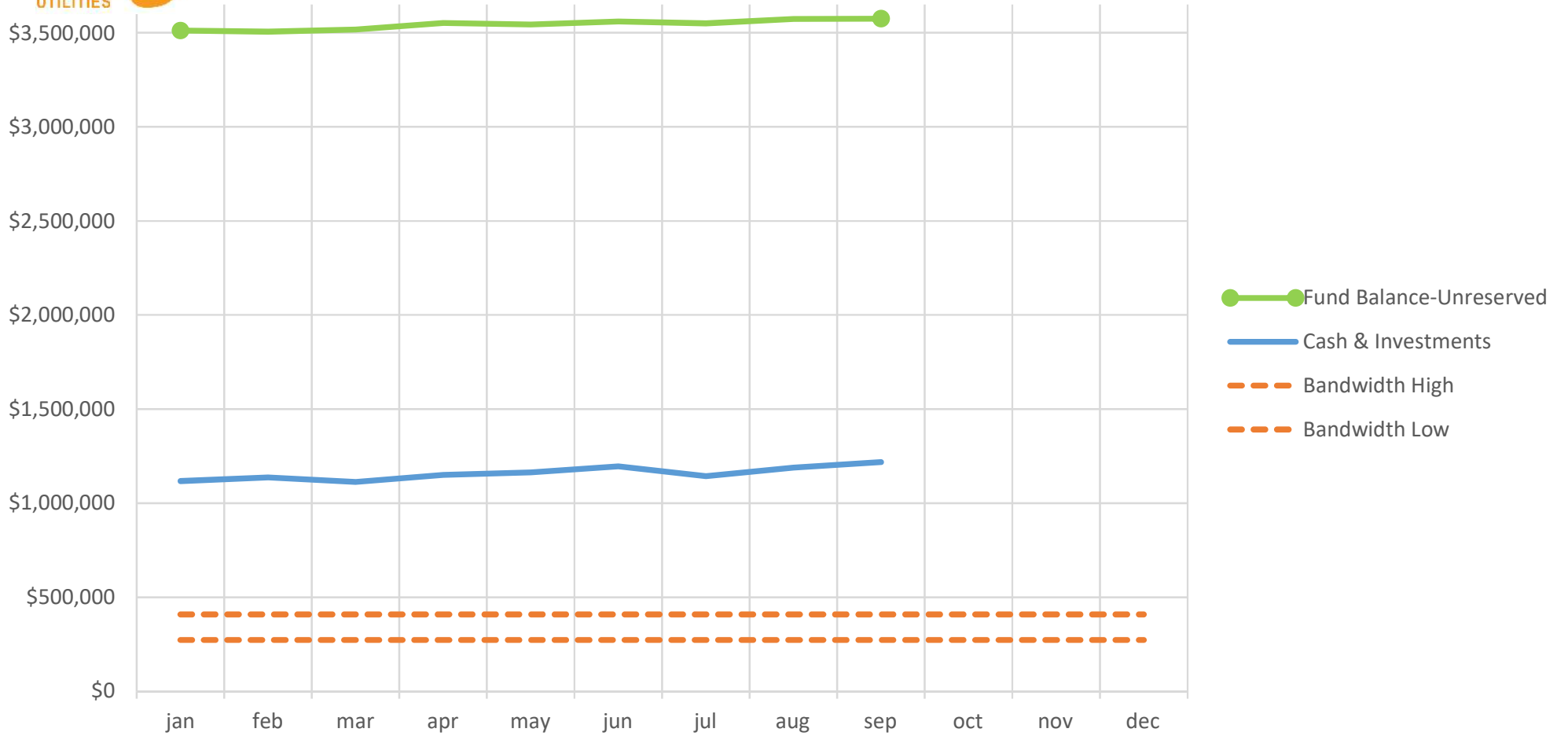


ELECTRIC FUND - 2020 Fund Balance Components Cash & Investments



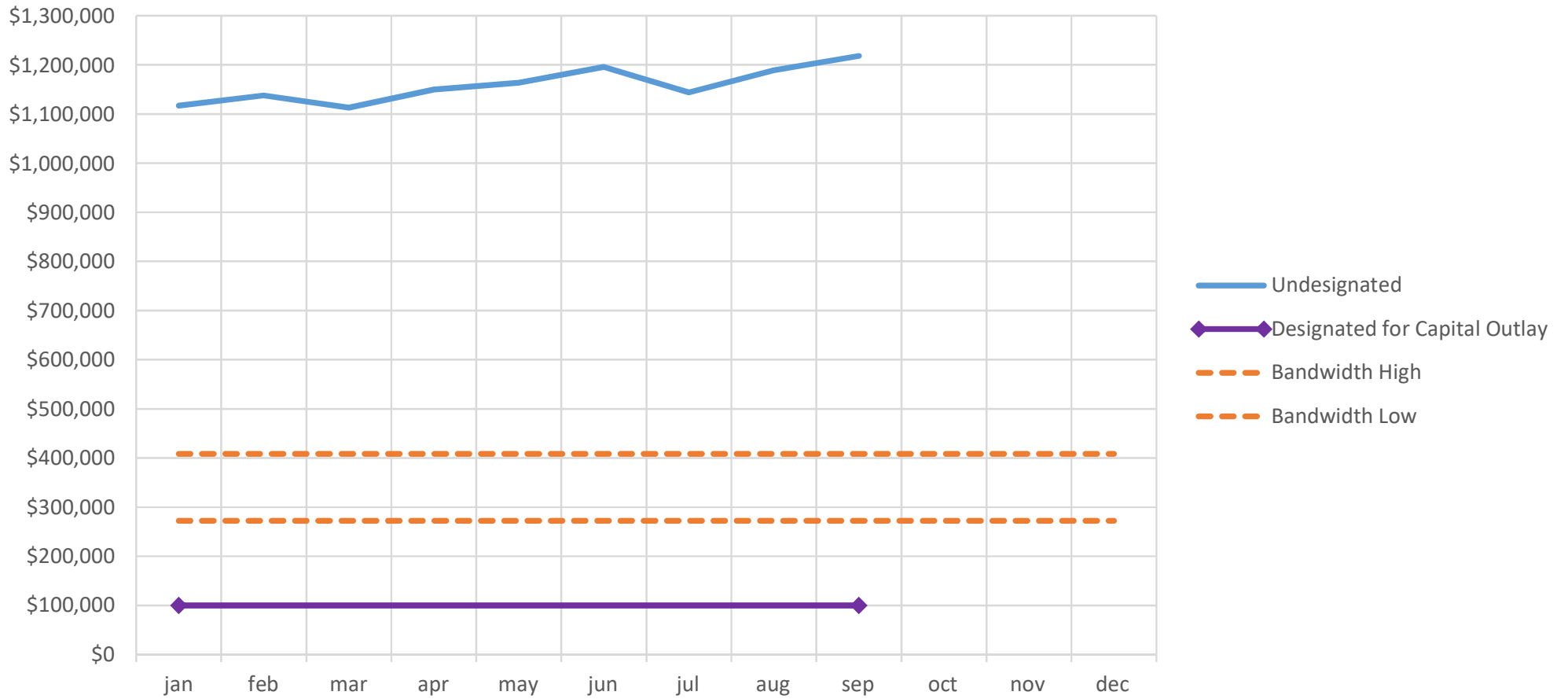


WATER FUND - 2020 Cash & Investments/Fund Balance



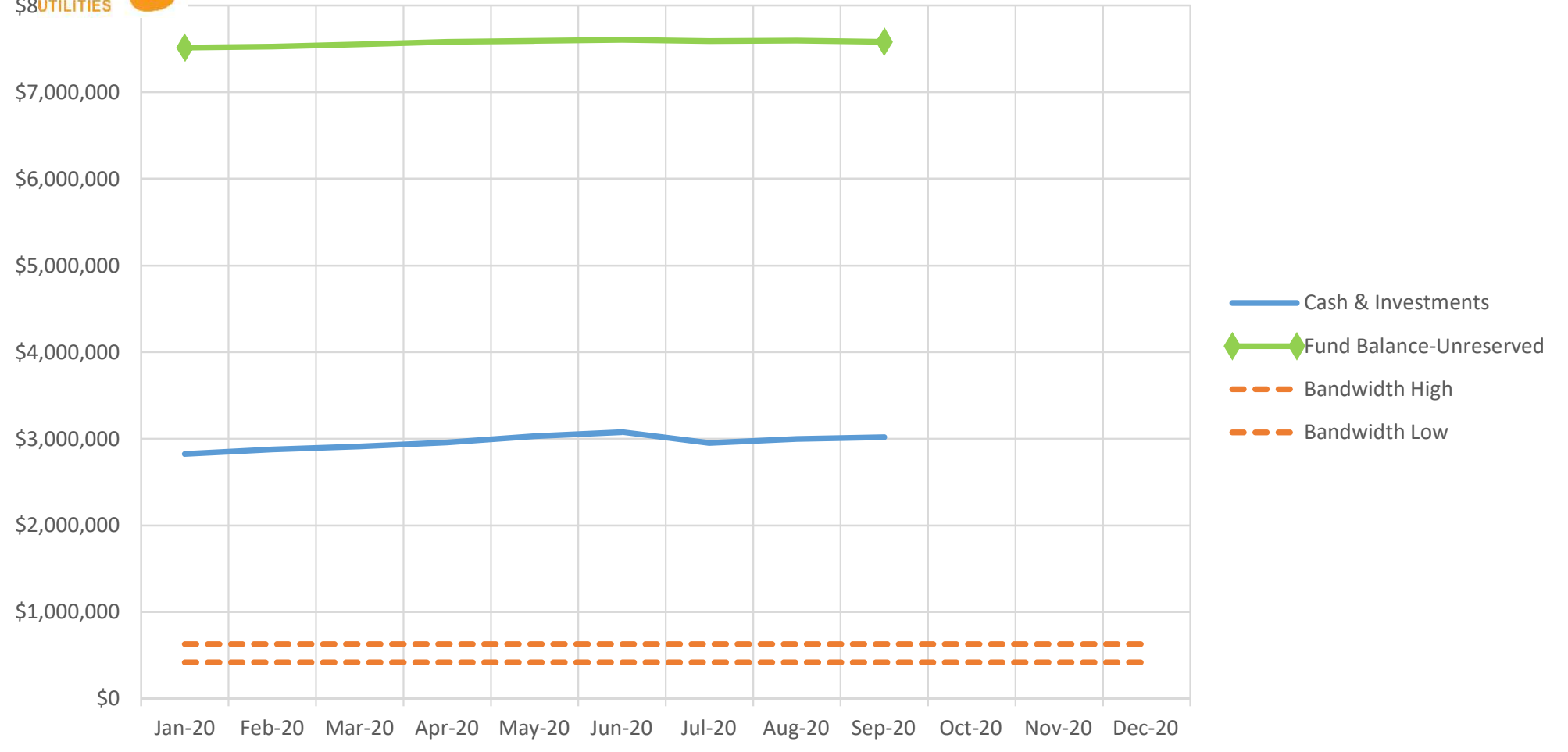


WATER FUND - 2020 Fund Balance Components Cash & Investments



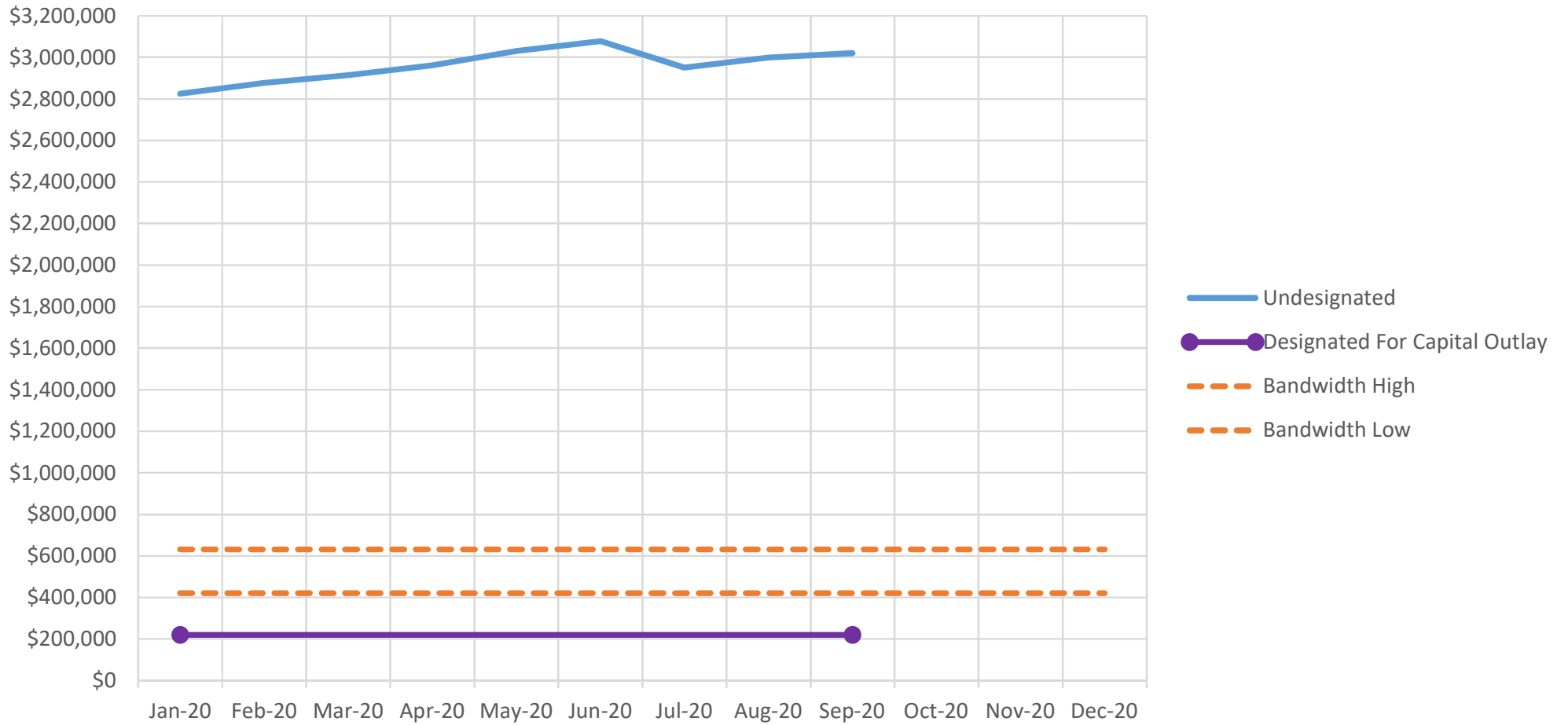


SEWER FUND - 2020 Cash & Investments/Fund Balance





SEWER FUND - 2020 Fund Balance Components Cash & Investments



CITY OF MORA/MORA MUNICIPAL UTILITIES
 Current Investments
 Information current as of September 30, 2020

| Bank/Agency | Location | Type | FDIC # | Broker | Amount | DTD/Issued | Due | Rate |
|------------------------------------|--------------------|------|--------|-------------|---------------|------------|------------|-------|
| Firstbank | Santurce, PR | CD | 30387 | 4M Fund | \$ 60,000.00 | 1/31/2014 | 2/1/2021 | 2.75% |
| BMW Bank of North America | Salt Lake City, UT | CD | 35141 | 4M Fund | \$ 245,000.00 | 8/16/2019 | 2/16/2021 | 1.90% |
| Texas Capital Bank | Richardson, TX | CD | 34383 | 4M Fund | \$ 246,700.00 | 3/6/2020 | 3/8/2021 | 1.30% |
| Pacific Western Bank | Brea, CA | CD | 24045 | 4M Fund | \$ 247,100.00 | 3/6/2020 | 3/8/2021 | 1.12% |
| Royal Business Bank | Los Angeles, CA | CD | 58816 | 4M Fund | \$ 247,400.00 | 3/6/2020 | 3/8/2021 | 1.00% |
| Prudential Bank | Philadelphia, PA | CD | 30011 | 4M Fund | \$ 198,000.00 | 3/6/2020 | 3/8/2021 | 0.89% |
| Kansas State Bank | Manhattan, KS | CD | 19899 | 4M Fund | \$ 200,000.00 | 8/2/2019 | 8/2/2021 | 2.04% |
| Financial Federal Bank | Memphis, TN | CD | 31840 | 4M Fund | \$ 240,000.00 | 8/9/2019 | 8/9/2021 | 2.00% |
| Servisfirst Bank | Tampa, FL | CD | 57993 | 4M Fund | \$ 240,000.00 | 8/9/2019 | 8/9/2021 | 1.98% |
| Everbank | Jacksonville, FL | CD | 34775 | 4M Fund | \$ 248,000.00 | 8/12/2016 | 8/12/2021 | 1.50% |
| State Bank of India NY | New York, NY | CD | 33682 | 4M Fund | \$ 245,000.00 | 1/26/2017 | 1/26/2022 | 2.30% |
| First National Bank | Paragould, AR | CD | 3887 | 4M Fund | \$ 235,100.00 | 8/9/2019 | 8/8/2022 | 1.98% |
| Latino Community Credit Union | Durham, NC | CD | 68430 | 4M Fund | \$ 232,000.00 | 8/16/2019 | 8/16/2022 | 2.39% |
| American Express Bank | Salt Lake City, UT | CD | 35328 | 4M Fund | \$ 245,000.00 | 9/6/2017 | 9/6/2022 | 2.40% |
| Neighborhood National Bank | Mora, MN | CD | 18885 | None | \$ 245,000.00 | 1/26/2018 | 1/26/2022 | 2.00% |
| Discover Bank | Greenwood, DE | CD | 5649 | RBC Wealth | \$ 108,000.00 | 3/26/2014 | 3/26/2021 | 2.60% |
| PrivateBank | Chicago, IL | CD | 33306 | RBC Wealth | \$ 245,000.00 | 8/30/2016 | 8/30/2021 | 1.50% |
| East Boston Savings Bank | Boston, MA | CD | 33510 | RBC Wealth | \$ 235,000.00 | 9/28/2017 | 9/28/2022 | 2.05% |
| Ally Bank | Midvale, UT | CD | 57803 | RBC Wealth | \$ 140,000.00 | 10/11/2019 | 10/11/2022 | 1.90% |
| Morgan Stanley Bank | Salt Lake City, UT | CD | 32992 | RBC Wealth | \$ 245,000.00 | 6/19/2018 | 6/23/2023 | 3.20% |
| Discover Bank | Greenwood, DE | CD | 5649 | RBC Wealth | \$ 139,000.00 | 9/28/2016 | 9/28/2023 | 1.80% |
| Comenity Capital Bank | Salt Lake City, UT | CD | 57570 | RBC Wealth | \$ 245,000.00 | 6/27/2019 | 6/27/2024 | 2.50% |
| Lakeside Bank | Chicago, IL | CD | 19573 | RBC Wealth | \$ 170,000.00 | 3/30/2020 | 3/31/2025 | 1.40% |
| Texas Exchange Bank | Crowley, TX | CD | 20099 | RBC Wealth | \$ 245,000.00 | 6/19/2020 | 6/19/2025 | 1.00% |
| EnerBank | Salt Lake City, UT | CD | 57293 | RBC Wealth | \$ 245,000.00 | 5/20/2020 | 5/14/2027 | 1.10% |
| Merrick Bank | South Jordan, UT | CD | 34519 | RBC Wealth | \$ 245,000.00 | 7/31/2020 | 7/31/2028 | 1.00% |
| CitiBank | Sioux Falls, SD | CD | 7213 | Wells Fargo | \$ 121,000.00 | 12/6/2018 | 12/7/2020 | 3.00% |
| Morgan Stanley Private Bank | Purchase, NY | CD | 34221 | Wells Fargo | \$ 244,000.00 | 2/28/2019 | 3/1/2021 | 2.60% |
| Valley National Bank | Passaic, NJ | CD | 9396 | Wells Fargo | \$ 235,000.00 | 4/7/2020 | 4/7/2021 | 1.25% |
| Sallie Mae Bank | Salt Lake City, UT | CD | 58177 | Wells Fargo | \$ 120,000.00 | 6/19/2019 | 6/21/2021 | 2.30% |
| Goldman Sachs Bank | New York, NY | CD | 33124 | Wells Fargo | \$ 115,000.00 | 6/26/2019 | 6/27/2021 | 2.20% |
| Ally Bank | Midvale, UT | CD | 57803 | Wells Fargo | \$ 105,000.00 | 7/11/2019 | 7/21/2021 | 2.10% |
| Goldman Sachs Bank | New York, NY | CD | 33124 | Wells Fargo | \$ 132,000.00 | 8/7/2019 | 8/9/2021 | 2.10% |
| First Financial Bank | Cincinnati, OH | CD | 6600 | Wells Fargo | \$ 245,000.00 | 8/14/2020 | 8/13/2021 | 0.15% |
| Sallie Mae Bank | Salt Lake City, UT | CD | 58177 | Wells Fargo | \$ 125,000.00 | 8/21/2019 | 8/20/2021 | 1.90% |
| Safra National Bank | New York, NY | CD | 26876 | Wells Fargo | \$ 150,000.00 | 9/15/2020 | 10/15/2021 | 0.15% |
| Comenity Bank | Wilmington, DE | CD | 27499 | Wells Fargo | \$ 200,000.00 | 8/15/2019 | 8/15/2022 | 2.10% |
| BMO Harris Bank | Chicago, IL | CD | 16571 | Wells Fargo | \$ 245,000.00 | 9/28/2020 | 3/28/2024 | 0.30% |
| JP Morgan Chase | Columbus, OH | CD | 628 | Wells Fargo | \$ 245,000.00 | 9/23/2020 | 9/23/2026 | 0.50% |
| Federal Home Loan Mortgage Company | McLean, VA | AG | | Wells Fargo | \$ 147,000.00 | 9/1/1993 | 9/1/2023 | 6.50% |

\$ 8,065,300.00

CD = Certificate of Deposit
 AG = Agency/Government Asset Backed

Note: This list represents the combined portfolios of the City of Mora and Mora Municipal Utilities. For breakdown by fund, please refer to the Balance Sheet.

CITY OF MORA/MORA MUNICIPAL UTILITIES
 Debt Retirement Schedule
 For the Year Ending December 31, 2020

| SUM OF ALL DEBT | | | Series 2011A | Series 2015B | Series 2015C | | | Series 2017A | MnPFA Water | MnPFA WWTP | Mora HRA Bonds* | | |
|-----------------|------------------|---------------------|------------------|------------------|------------------|------------------|------------------|------------------|------------------|------------------|-----------------|------------------|------------------|
| | | | Fund 530 | Fund 532 | Fund 533 | Fund 652 | Fund 653 | Fund 535 | G 652-22031 | G 653-22031 | Series 2019A | Series 2009B | |
| Year | Year-End Balance | Principal Reduction | Year-End Balance | Year-End Balance | Year-End Balance | Year-End Balance | Year-End Balance | Year-End Balance | Year-End Balance | Year-End Balance | Year | Year-End Balance | Year-End Balance |
| 2016 | 11,387,000.00 | | 435,000.00 | 1,385,000.00 | 1,251,495.00 | 267,364.00 | 221,141.00 | 1,325,000.00 | 1,151,000.00 | 3,326,000.00 | | | 350,000.00 |
| 2017 | 12,039,957.75 | 652,957.75 | 370,000.00 | 1,345,000.00 | 1,125,495.00 | 246,858.00 | 202,647.00 | 1,325,000.00 | 1,078,000.00 | 3,056,957.75 | | | 290,000.00 |
| 2018 | 11,484,957.75 | (555,000.00) | 300,000.00 | 1,290,000.00 | 1,039,495.00 | 223,036.00 | 182,469.00 | 1,325,000.00 | 1,004,000.00 | 2,895,957.75 | | | 225,000.00 |
| 2019 | 11,080,000.00 | (404,957.75) | 230,000.00 | 1,230,000.00 | 942,495.00 | 201,854.00 | 165,651.00 | 1,290,000.00 | 928,000.00 | 2,842,000.00 | 2019 | 3,095,000.00 | 155,000.00 |
| 2020 | 10,433,000.00 | (647,000.00) | 155,000.00 | 1,170,000.00 | 840,495.00 | 180,672.00 | 148,833.00 | 1,235,000.00 | 851,000.00 | 2,677,000.00 | 2020 | 3,095,000.00 | 80,000.00 |
| 2021 | 9,759,000.00 | (674,000.00) | 80,000.00 | 1,110,000.00 | 733,495.00 | 159,490.00 | 132,015.00 | 1,180,000.00 | 773,000.00 | 2,511,000.00 | 2021 | 3,080,000.00 | - |
| 2022 | 9,046,000.00 | (713,000.00) | - | 1,050,000.00 | 622,995.00 | 137,648.00 | 114,357.00 | 1,125,000.00 | 693,000.00 | 2,343,000.00 | 2022 | 2,960,000.00 | |
| 2023 | 8,400,000.00 | (646,000.00) | | 985,000.00 | 512,495.00 | 115,806.00 | 96,699.00 | 1,070,000.00 | 612,000.00 | 2,173,000.00 | 2023 | 2,835,000.00 | |
| 2024 | 7,731,000.00 | (669,000.00) | | 920,000.00 | 398,495.00 | 89,990.00 | 76,515.00 | 1,010,000.00 | 529,000.00 | 2,002,000.00 | 2024 | 2,705,000.00 | |
| 2025 | 7,059,000.00 | (672,000.00) | | 855,000.00 | 284,495.00 | 64,174.00 | 56,331.00 | 950,000.00 | 445,000.00 | 1,829,000.00 | 2025 | 2,575,000.00 | |
| 2026 | 6,378,000.00 | (681,000.00) | | 790,000.00 | 166,995.00 | 37,698.00 | 35,307.00 | 890,000.00 | 359,000.00 | 1,654,000.00 | 2026 | 2,445,000.00 | |
| 2027 | 5,684,000.00 | (694,000.00) | | 720,000.00 | 50,995.00 | 10,562.00 | 13,443.00 | 830,000.00 | 272,000.00 | 1,477,000.00 | 2027 | 2,310,000.00 | |
| 2028 | 5,067,000.00 | (617,000.00) | | 650,000.00 | - | - | - | 765,000.00 | 183,000.00 | 1,299,000.00 | 2028 | 2,170,000.00 | |
| 2029 | 4,516,000.00 | (551,000.00) | | 580,000.00 | | | | 700,000.00 | 92,000.00 | 1,119,000.00 | 2029 | 2,025,000.00 | |
| 2030 | 3,952,000.00 | (564,000.00) | | 505,000.00 | | | | 630,000.00 | - | 937,000.00 | 2030 | 1,880,000.00 | |
| 2031 | 3,473,000.00 | (479,000.00) | | 430,000.00 | | | | 560,000.00 | | 753,000.00 | 2031 | 1,730,000.00 | |
| 2032 | 2,987,000.00 | (486,000.00) | | 350,000.00 | | | | 490,000.00 | | 567,000.00 | 2032 | 1,580,000.00 | |
| 2033 | 2,485,000.00 | (502,000.00) | | 265,000.00 | | | | 415,000.00 | | 380,000.00 | 2033 | 1,425,000.00 | |
| 2034 | 1,976,000.00 | (509,000.00) | | 180,000.00 | | | | 340,000.00 | | 191,000.00 | 2034 | 1,265,000.00 | |
| 2035 | 1,455,000.00 | (521,000.00) | | 90,000.00 | | | | 260,000.00 | | - | 2035 | 1,105,000.00 | |
| 2036 | 1,115,000.00 | (340,000.00) | | - | | | | 175,000.00 | | | 2036 | 940,000.00 | |
| 2037 | 860,000.00 | (255,000.00) | | | | | | 90,000.00 | | | 2037 | 770,000.00 | |
| 2038 | 595,000.00 | (265,000.00) | | | | | | - | | | 2038 | 595,000.00 | |
| 2039 | 415,000.00 | (180,000.00) | | | | | | | | | 2039 | 415,000.00 | |
| 2040 | - | (415,000.00) | | | | | | | | | 2040 | - | |
| 2041 | - | - | | | | | | | | | | | |
| 2042 | - | - | | | | | | | | | | | |
| 2043 | - | - | | | | | | | | | | | |

* These Bonds are special obligations of the Authority but are general obligations of the City for which the City pledges its full faith, credit and taxing powers.



CITY OF MORA
Revenue Guideline For Commission
 Current Period: September 2020

| Last Dim Descr | 2020 YTD Budget | 2020 YTD Amt | 2020 YTD Balance | 2020 % of Budget Remain | Explanation |
|-------------------------------|-----------------------|-----------------------|-----------------------|-------------------------|-------------|
| Fund 651 ELECTRIC FUND | | | | | |
| Other State Grants & Aids | \$0.00 | \$0.00 | \$0.00 | 0.00% | |
| PERA Aid | \$0.00 | \$0.00 | \$0.00 | 0.00% | |
| Int/Pen on Spec Assmts | \$500.00 | \$211.09 | \$288.91 | 57.78% | |
| Interest Earnings | \$135,780.00 | \$95,955.92 | \$39,824.08 | 29.33% | |
| Unrealized Gain/(Loss) on Inv | \$0.00 | \$58,649.22 | -\$58,649.22 | 0.00% | |
| Dividends | \$2,390.00 | \$0.00 | \$2,390.00 | 100.00% | |
| Service Chg on NSF Checks | \$600.00 | \$420.00 | \$180.00 | 30.00% | |
| Electricity Sales | \$5,265,900.00 | \$3,646,194.08 | \$1,619,705.92 | 30.76% | |
| Misc Income | \$500.00 | \$3,648.71 | -\$3,148.71 | -629.74% | See Note A. |
| Excess Equity | \$0.00 | \$0.00 | \$0.00 | 0.00% | |
| SMMPA Contract | \$400,000.00 | \$286,293.53 | \$113,706.47 | 28.43% | |
| CIP Reimbursements | \$40,000.00 | \$23,037.25 | \$16,962.75 | 42.41% | |
| Penalties | \$38,000.00 | \$42,745.57 | -\$4,745.57 | -12.49% | |
| Misc Service Revenues | \$25,000.00 | \$4,033.85 | \$20,966.15 | 83.86% | |
| Rent from Elec Property | \$5,688.00 | \$6,288.00 | -\$600.00 | -10.55% | |
| Labor Sales | \$5,000.00 | \$2,550.00 | \$2,450.00 | 49.00% | COVID |
| Recoveries of Bad Debt | \$200.00 | \$61.14 | \$138.86 | 69.43% | |
| Cash Over/Short | \$0.00 | \$0.00 | \$0.00 | 0.00% | |
| Sale of Fixed Assets | \$0.00 | \$0.00 | \$0.00 | 0.00% | |
| Trf from Special Revenue Fund | \$8,270.00 | \$4,190.75 | \$4,079.25 | 49.33% | |
| Trf from Enterprise Fund | \$0.00 | \$0.00 | \$0.00 | 0.00% | |
| Special Items | \$0.00 | \$0.00 | \$0.00 | 0.00% | |
| Fund 651 ELECTRIC FUND | \$5,927,828.00 | \$4,174,279.11 | \$1,753,548.89 | 29.58% | |
| Fund 652 WATER FUND | | | | | |
| Other State Grants & Aids | \$0.00 | \$0.00 | \$0.00 | 0.00% | |
| PERA Aid | \$0.00 | \$0.00 | \$0.00 | 0.00% | |
| Special Assessments | \$200.00 | \$0.00 | \$200.00 | 100.00% | |
| Int/Pen on Spec Assmts | \$600.00 | \$105.54 | \$494.46 | 82.41% | |
| Interest Earnings | \$15,240.00 | \$8,718.25 | \$6,521.75 | 42.79% | |
| Unrealized Gain/(Loss) on Inv | \$0.00 | \$7,498.41 | -\$7,498.41 | 0.00% | |
| Dividends | \$270.00 | \$0.00 | \$270.00 | 100.00% | |
| Service Chg on NSF Checks | \$0.00 | \$0.00 | \$0.00 | 0.00% | |
| Water Sales | \$742,600.00 | \$578,680.88 | \$163,919.12 | 22.07% | |
| Misc Income | \$4,000.00 | \$2,914.25 | \$1,085.75 | 27.14% | |
| Penalties | \$14,000.00 | \$7,150.60 | \$6,849.40 | 48.92% | COVID |
| Labor Sales | \$2,000.00 | \$600.00 | \$1,400.00 | 70.00% | COVID |
| Antenna Leases | \$3,740.00 | \$3,940.05 | -\$200.05 | -5.35% | |
| WAC Fees | \$20,000.00 | \$10,500.00 | \$9,500.00 | 47.50% | |
| Water/Sewer Buy-In | \$0.00 | \$0.00 | \$0.00 | 0.00% | |
| Sale of Fixed Assets | \$0.00 | \$0.00 | \$0.00 | 0.00% | |
| Trf from Special Revenue Fund | \$0.00 | \$0.00 | \$0.00 | 0.00% | |
| Trf from Enterprise Fund | \$150,000.00 | \$0.00 | \$150,000.00 | 100.00% | |
| Fund 652 WATER FUND | \$952,650.00 | \$620,107.98 | \$332,542.02 | 34.91% | |
| Fund 653 SEWER FUND | | | | | |
| Other State Grants & Aids | \$0.00 | \$0.00 | \$0.00 | 0.00% | |
| PERA Aid | \$0.00 | \$0.00 | \$0.00 | 0.00% | |
| Point Source Imp Grant (PFA) | \$0.00 | \$8,608.62 | -\$8,608.62 | 0.00% | See Note B. |
| Clean Water Grant (PFA) | \$0.00 | \$1,814.91 | -\$1,814.91 | 0.00% | See Note B. |
| Special Assessments | \$0.00 | \$0.00 | \$0.00 | 0.00% | |
| Int/Pen on Spec Assmts | \$600.00 | \$105.53 | \$494.47 | 82.41% | |
| Interest Earnings | \$12,290.00 | \$22,985.93 | -\$10,695.93 | -87.03% | |



CITY OF MORA
Revenue Guideline For Commission
 Current Period: September 2020

| Last Dim Descr | 2020 YTD Budget | 2020 YTD Amt | 2020 YTD Balance | 2020 % of Budget Remain | Explanation |
|--------------------------------|-----------------------|-----------------------|-----------------------|-------------------------|-------------|
| Unrealized Gain/(Loss) on Inv | \$0.00 | \$18,912.17 | -\$18,912.17 | 0.00% | |
| Dividends | \$1,580.00 | \$0.00 | \$1,580.00 | 100.00% | |
| Misc Income | \$0.00 | \$136.56 | -\$136.56 | 0.00% | |
| Penalties | \$20,000.00 | \$10,495.12 | \$9,504.88 | 47.52% | COVID |
| Labor Sales | \$0.00 | \$0.00 | \$0.00 | 0.00% | |
| Water/Sewer Buy-In | \$0.00 | \$0.00 | \$0.00 | 0.00% | |
| Land Rent - WWTP | \$5,130.00 | \$2,565.00 | \$2,565.00 | 50.00% | |
| Sewer Charges - Treatment | \$995,800.00 | \$765,605.32 | \$230,194.68 | 23.12% | |
| SAC Fees | \$30,000.00 | \$16,800.00 | \$13,200.00 | 44.00% | |
| Sale of Fixed Assets | \$0.00 | \$0.00 | \$0.00 | 0.00% | |
| Comp. for Loss of Fixed Assets | \$0.00 | \$0.00 | \$0.00 | 0.00% | |
| Trf from Special Revenue Fund | \$0.00 | \$0.00 | \$0.00 | 0.00% | |
| Trf from Enterprise Fund | \$0.00 | \$0.00 | \$0.00 | 0.00% | |
| Fund 653 SEWER FUND | \$1,065,400.00 | \$848,029.16 | \$217,370.84 | 20.40% | |
| | \$7,945,878.00 | \$5,642,416.25 | \$2,303,461.75 | 28.99% | |



CITY OF MORA
Expenditure Guideline For Commission
 Current Period: September 2020

| Last Dim Descr | 2020 YTD Budget | 2020 YTD Amt | 2020 YTD Balance | 2020 % of Budget Remain | Explanation |
|---|-----------------------|-----------------------|-----------------------|-------------------------|-------------|
| Fund 651 ELECTRIC FUND | | | | | |
| Dept 49510 GENERATION & POWER SUPPLY | | | | | |
| Wages & Salaries | \$69,847.00 | \$29,257.83 | \$40,589.17 | 58.11% | |
| PERA | \$5,239.00 | \$2,194.28 | \$3,044.72 | 58.12% | |
| FICA | \$4,331.00 | \$1,692.58 | \$2,638.42 | 60.92% | |
| Medicare | \$1,013.00 | \$395.78 | \$617.22 | 60.93% | |
| VEBA | \$327.00 | \$110.75 | \$216.25 | 66.13% | |
| Health Insurance | \$12,082.00 | \$5,743.18 | \$6,338.82 | 52.46% | |
| Life Insurance | \$113.00 | \$63.64 | \$49.36 | 43.68% | |
| Office Supplies | \$0.00 | \$33.47 | -\$33.47 | 0.00% | |
| Cleaning Supplies | \$0.00 | \$81.53 | -\$81.53 | 0.00% | COVID |
| Motor Fuels | \$400.00 | \$96.66 | \$303.34 | 75.84% | |
| Other Operating Supplies | \$2,500.00 | \$1,207.83 | \$1,292.17 | 51.69% | |
| Uniforms | \$2,000.00 | \$1,644.81 | \$355.19 | 17.76% | |
| Repair/Maint - Bldg & Equip | \$2,500.00 | \$483.93 | \$2,016.07 | 80.64% | |
| Small Tools & Equipment | \$1,000.00 | \$325.96 | \$674.04 | 67.40% | |
| Large Tools & Equipment | \$1,000.00 | \$0.00 | \$1,000.00 | 100.00% | |
| Meetings, Training, & Travel | \$350.00 | \$53.35 | \$296.65 | 84.76% | COVID |
| Advertising | \$0.00 | \$467.00 | -\$467.00 | 0.00% | |
| Workers Comp Insurance | \$2,829.00 | \$1,816.82 | \$1,012.18 | 35.78% | |
| Water | \$1,300.00 | \$1,108.24 | \$191.76 | 14.75% | |
| Natural Gas - Heat | \$8,000.00 | \$4,246.74 | \$3,753.26 | 46.92% | |
| Garbage Removal | \$900.00 | \$721.00 | \$179.00 | 19.89% | |
| Sewer | \$1,300.00 | \$881.43 | \$418.57 | 32.20% | |
| Storm Water | \$200.00 | \$143.64 | \$56.36 | 28.18% | |
| Fuel Oil | \$75,000.00 | \$16,099.68 | \$58,900.32 | 78.53% | |
| Dues & Subscriptions | \$1,900.00 | \$1,613.38 | \$286.62 | 15.09% | |
| Miscellaneous | \$1,500.00 | \$1,237.52 | \$262.48 | 17.50% | |
| Generation Exp | \$25,000.00 | \$9,816.99 | \$15,183.01 | 60.73% | |
| Purchased Power | \$4,400,000.00 | \$2,864,035.94 | \$1,535,964.06 | 34.91% | |
| Maint of Structure | \$10,000.00 | \$764.55 | \$9,235.45 | 92.35% | |
| Maint of Gen Equip | \$40,000.00 | \$4,525.65 | \$35,474.35 | 88.69% | |
| Landfill Gen Exp | \$25,000.00 | \$9,989.32 | \$15,010.68 | 60.04% | |
| Dept 49510 GENERATION & P | \$4,695,631.00 | \$2,960,853.48 | \$1,734,777.52 | 36.94% | |
| Dept 49515 LANDFILL GENERATION | | | | | |
| Wages & Salaries | \$74,333.00 | \$49,141.96 | \$25,191.04 | 33.89% | |
| PERA | \$5,575.00 | \$3,685.73 | \$1,889.27 | 33.89% | |
| FICA | \$4,609.00 | \$2,838.13 | \$1,770.87 | 38.42% | |
| Medicare | \$1,078.00 | \$663.69 | \$414.31 | 38.43% | |
| ICMA | \$0.00 | \$0.00 | \$0.00 | 0.00% | |
| VEBA | \$348.00 | \$195.53 | \$152.47 | 43.81% | |
| Health Insurance | \$12,858.00 | \$9,482.65 | \$3,375.35 | 26.25% | |
| Life Insurance | \$120.00 | \$105.29 | \$14.71 | 12.26% | |
| Workers Comp Insurance | \$3,010.00 | \$1,932.88 | \$1,077.12 | 35.78% | |
| Dept 49515 LANDFILL GENER | \$101,931.00 | \$68,045.86 | \$33,885.14 | 33.24% | |
| Dept 49520 ELECTRIC DISTRIBUTION | | | | | |
| Wages & Salaries | \$94,480.00 | \$83,822.67 | \$10,657.33 | 11.28% | |
| PERA | \$7,081.00 | \$6,286.38 | \$794.62 | 11.22% | |
| FICA | \$5,858.00 | \$4,813.53 | \$1,044.47 | 17.83% | |
| Medicare | \$1,370.00 | \$1,125.67 | \$244.33 | 17.83% | |
| VEBA | \$435.00 | \$492.40 | -\$57.40 | -13.20% | |
| Health Insurance | \$16,417.00 | \$15,852.52 | \$564.48 | 3.44% | |



CITY OF MORA
Expenditure Guideline For Commission
 Current Period: September 2020

| Last Dim Descr | 2020 YTD Budget | 2020 YTD Amt | 2020 YTD Balance | 2020 % of Budget Remain | Explanation |
|---|---------------------|---------------------|--------------------|-------------------------|--------------|
| Life Insurance | \$154.00 | \$184.29 | -\$30.29 | -19.67% | |
| Cleaning Supplies | \$0.00 | \$58.50 | -\$58.50 | 0.00% | COVID |
| Other Operating Supplies | \$0.00 | \$335.25 | -\$335.25 | 0.00% | COVID |
| Uniforms | \$300.00 | \$2,161.90 | -\$1,861.90 | -620.63% | See Note. C. |
| Repair/Maint - Bldg & Equip | \$500.00 | \$0.00 | \$500.00 | 100.00% | |
| Small Tools & Equipment | \$6,500.00 | \$4,885.31 | \$1,614.69 | 24.84% | |
| Engineering | \$20,000.00 | \$13,769.03 | \$6,230.97 | 31.15% | |
| Professional Services - Misc | \$10,000.00 | \$1,905.94 | \$8,094.06 | 80.94% | |
| ECE Services | \$85,000.00 | \$32,631.06 | \$52,368.94 | 61.61% | |
| Postage | \$0.00 | \$226.04 | -\$226.04 | 0.00% | |
| Meetings, Training, & Travel | \$10,500.00 | \$9,333.49 | \$1,166.51 | 11.11% | |
| Workers Comp Insurance | \$3,978.00 | \$2,553.15 | \$1,424.85 | 35.82% | |
| Miscellaneous | \$1,000.00 | \$5,077.00 | -\$4,077.00 | -407.70% | See Note D. |
| Maint of Substation Equip | \$15,000.00 | \$1,537.87 | \$13,462.13 | 89.75% | |
| Maint of Overhead Lines | \$75,000.00 | \$113,942.33 | -\$38,942.33 | -51.92% | |
| Maint of Underground Lines | \$30,000.00 | \$11,148.57 | \$18,851.43 | 62.84% | |
| Maint of St. Lights & Signals | \$20,000.00 | \$5,290.24 | \$14,709.76 | 73.55% | |
| Maint of Meters | \$6,500.00 | \$1,048.26 | \$5,451.74 | 83.87% | |
| Maint of GIS | \$16,000.00 | \$12,113.75 | \$3,886.25 | 24.29% | |
| Misc Distribution Exp | \$8,000.00 | \$6,421.55 | \$1,578.45 | 19.73% | |
| Line Transformer Exp | \$12,000.00 | \$10,361.60 | \$1,638.40 | 13.65% | |
| Truck Expense | \$5,000.00 | \$7,176.51 | -\$2,176.51 | -43.53% | |
| Trf to General Fund | \$0.00 | \$0.00 | \$0.00 | 0.00% | |
| Dept 49520 ELECTRIC DISTRI | \$451,073.00 | \$354,554.81 | \$96,518.19 | 21.40% | |
| Dept 49530 ELECTRIC ADMINISTRATION | | | | | |
| Wages & Salaries | \$168,736.00 | \$124,929.55 | \$43,806.45 | 25.96% | |
| PERA | \$12,276.00 | \$8,822.98 | \$3,453.02 | 28.13% | |
| FICA | \$10,462.00 | \$7,297.40 | \$3,164.60 | 30.25% | |
| Medicare | \$2,447.00 | \$1,706.93 | \$740.07 | 30.24% | |
| ICMA | \$0.00 | \$0.00 | \$0.00 | 0.00% | |
| VEBA | \$998.00 | \$752.86 | \$245.14 | 24.56% | |
| Health Insurance | \$34,476.00 | \$16,118.17 | \$18,357.83 | 53.25% | |
| Life Insurance | \$344.00 | \$247.76 | \$96.24 | 27.98% | |
| Unemployment Benefit Pmts | \$0.00 | \$0.00 | \$0.00 | 0.00% | |
| Office Supplies | \$1,800.00 | \$1,881.02 | -\$81.02 | -4.50% | |
| Other Operating Supplies | \$150.00 | \$89.89 | \$60.11 | 40.07% | |
| Uniforms | \$300.00 | \$82.00 | \$218.00 | 72.67% | |
| Small Tools & Equipment | \$700.00 | \$430.27 | \$269.73 | 38.53% | |
| Auditing | \$4,000.00 | \$4,948.25 | -\$948.25 | -23.71% | |
| Engineering | \$5,000.00 | \$0.00 | \$5,000.00 | 100.00% | |
| Legal Services | \$700.00 | \$2,576.15 | -\$1,876.15 | -268.02% | |
| Professional Services - Misc | \$2,250.00 | \$13,518.30 | -\$11,268.30 | -500.81% | See Note E. |
| Telephone | \$6,000.00 | \$3,974.61 | \$2,025.39 | 33.76% | |
| Postage | \$700.00 | \$440.75 | \$259.25 | 37.04% | |
| Meetings, Training, & Travel | \$2,500.00 | \$211.46 | \$2,288.54 | 91.54% | COVID |
| Advertising | \$250.00 | \$30.71 | \$219.29 | 87.72% | |
| Contributions | \$20,300.00 | \$15,000.03 | \$5,299.97 | 26.11% | |
| Depreciation | \$184,500.00 | \$130,332.35 | \$54,167.65 | 29.36% | |
| Insurance | \$36,200.00 | \$24,885.72 | \$11,314.28 | 31.25% | |
| Workers Comp Insurance | \$5,048.00 | \$3,215.06 | \$1,832.94 | 36.31% | |
| Bad Debts/NSF Checks | \$400.00 | \$90.00 | \$310.00 | 77.50% | |
| Dues & Subscriptions | \$11,000.00 | \$10,442.00 | \$558.00 | 5.07% | |
| Miscellaneous | \$600.00 | \$43.49 | \$556.51 | 92.75% | |



CITY OF MORA

Expenditure Guideline For Commission

Current Period: September 2020

| Last Dim Descr | 2020 YTD Budget | 2020 YTD Amt | 2020 YTD Balance | 2020 % of Budget Remain | Explanation |
|-----------------------------------|-----------------------|-----------------------|-----------------------|-------------------------|-------------|
| Payment Processing Expenses | \$5,000.00 | \$4,504.84 | \$495.16 | 9.90% | |
| Change in Pension | \$0.00 | \$0.00 | \$0.00 | 0.00% | |
| Cust UB/Collection | \$7,300.00 | \$4,763.73 | \$2,536.27 | 34.74% | |
| Misc General Exp | \$0.00 | \$0.00 | \$0.00 | 0.00% | |
| Energy Conservation | \$50,000.00 | \$31,525.69 | \$18,474.31 | 36.95% | |
| Interest Expense | \$0.00 | \$0.00 | \$0.00 | 0.00% | |
| Interest on Customer Deposits | \$500.00 | \$248.37 | \$251.63 | 50.33% | |
| Trf to General Fund | \$42,341.00 | \$0.00 | \$42,341.00 | 100.00% | |
| Trf to Special Revenue Fund | \$0.00 | \$0.00 | \$0.00 | 0.00% | |
| Trf to Enterprise Fund | \$150,000.00 | \$0.00 | \$150,000.00 | 100.00% | |
| Dept 49530 ELECTRIC ADMINI | \$767,278.00 | \$413,110.34 | \$354,167.66 | 46.16% | |
| Fund 651 ELECTRIC FUND | \$6,015,913.00 | \$3,796,564.49 | \$2,219,348.51 | 36.89% | |
| Fund 652 WATER FUND | | | | | |
| Dept 49410 WATER SUPPLY | | | | | |
| Wages & Salaries | \$5,542.00 | \$5,838.93 | -\$296.93 | -5.36% | |
| PERA | \$416.00 | \$406.62 | \$9.38 | 2.25% | |
| FICA | \$344.00 | \$333.27 | \$10.73 | 3.12% | |
| Medicare | \$80.00 | \$77.90 | \$2.10 | 2.63% | |
| ICMA | \$0.00 | \$0.00 | \$0.00 | 0.00% | |
| VEBA | \$0.00 | \$3.75 | -\$3.75 | 0.00% | |
| Health Insurance | \$960.00 | \$1,064.18 | -\$104.18 | -10.85% | |
| Life Insurance | \$10.00 | \$13.28 | -\$3.28 | -32.80% | |
| Motor Fuels | \$0.00 | \$334.75 | -\$334.75 | 0.00% | |
| Lubricants & Additives | \$50.00 | \$0.00 | \$50.00 | 100.00% | |
| Other Operating Supplies | \$50.00 | \$0.00 | \$50.00 | 100.00% | |
| Repair/Maint - Bldg & Equip | \$15,000.00 | \$2,278.35 | \$12,721.65 | 84.81% | |
| Small Tools & Equipment | \$300.00 | \$23.99 | \$276.01 | 92.00% | |
| Professional Services - Misc | \$30,000.00 | \$14,121.13 | \$15,878.87 | 52.93% | |
| Meetings, Training, & Travel | \$500.00 | \$0.00 | \$500.00 | 100.00% | COVID |
| Workers Comp Insurance | \$293.00 | \$415.91 | -\$122.91 | -41.95% | |
| Electricity | \$10,000.00 | \$7,009.45 | \$2,990.55 | 29.91% | |
| Natural Gas - Heat | \$700.00 | \$335.99 | \$364.01 | 52.00% | |
| Garbage Removal | \$0.00 | \$0.00 | \$0.00 | 0.00% | |
| Storm Water | \$250.00 | \$180.90 | \$69.10 | 27.64% | |
| Miscellaneous | \$50.00 | \$0.00 | \$50.00 | 100.00% | |
| Dept 49410 WATER SUPPLY | \$64,545.00 | \$32,438.40 | \$32,106.60 | 49.74% | |
| Dept 49420 WATER TREATMENT | | | | | |
| Wages & Salaries | \$45,529.00 | \$28,367.71 | \$17,161.29 | 37.69% | |
| PERA | \$3,415.00 | \$2,127.53 | \$1,287.47 | 37.70% | |
| FICA | \$2,823.00 | \$1,617.44 | \$1,205.56 | 42.70% | |
| Medicare | \$660.00 | \$378.29 | \$281.71 | 42.68% | |
| ICMA | \$0.00 | \$0.00 | \$0.00 | 0.00% | |
| VEBA | \$3.00 | \$2.59 | \$0.41 | 13.67% | |
| Health Insurance | \$7,885.00 | \$6,677.11 | \$1,207.89 | 15.32% | |
| Life Insurance | \$85.00 | \$78.33 | \$6.67 | 7.85% | |
| Lab Supplies | \$0.00 | \$0.00 | \$0.00 | 0.00% | |
| Cleaning Supplies | \$100.00 | \$34.15 | \$65.85 | 65.85% | |
| Chemicals | \$26,000.00 | \$18,459.91 | \$7,540.09 | 29.00% | |
| Other Operating Supplies | \$200.00 | \$60.67 | \$139.33 | 69.67% | |
| Repair/Maint - Bldg & Equip | \$15,000.00 | \$2,287.90 | \$12,712.10 | 84.75% | |
| Small Tools & Equipment | \$500.00 | \$168.53 | \$331.47 | 66.29% | |
| Engineering | \$0.00 | \$0.00 | \$0.00 | 0.00% | |



CITY OF MORA
Expenditure Guideline For Commission
 Current Period: September 2020

| Last Dim Descr | 2020 YTD Budget | 2020 YTD Amt | 2020 YTD Balance | 2020 % of Budget Remain | Explanation |
|--|---------------------|--------------------|--------------------|-------------------------|-------------|
| Professional Services - Misc | \$4,000.00 | \$4,405.00 | -\$405.00 | -10.13% | |
| Postage | \$0.00 | \$20.81 | -\$20.81 | 0.00% | |
| Meetings, Training, & Travel | \$500.00 | \$0.00 | \$500.00 | 100.00% | COVID |
| Workers Comp Insurance | \$2,398.00 | \$3,404.22 | -\$1,006.22 | -41.96% | |
| Electricity | \$12,000.00 | \$7,047.01 | \$4,952.99 | 41.27% | |
| Natural Gas - Heat | \$1,800.00 | \$1,395.14 | \$404.86 | 22.49% | |
| Storm Water | \$120.00 | \$90.45 | \$29.55 | 24.63% | |
| Miscellaneous | \$150.00 | \$161.88 | -\$11.88 | -7.92% | |
| Dept 49420 WATER TREATME | \$123,168.00 | \$76,784.67 | \$46,383.33 | 37.66% | |
| Dept 49430 WATER DISTRIBUTION | | | | | |
| Wages & Salaries | \$25,813.00 | \$31,062.53 | -\$5,249.53 | -20.34% | |
| PERA | \$1,915.00 | \$2,262.39 | -\$347.39 | -18.14% | |
| FICA | \$1,600.00 | \$1,759.92 | -\$159.92 | -10.00% | |
| Medicare | \$374.00 | \$411.67 | -\$37.67 | -10.07% | |
| ICMA | \$0.00 | \$0.00 | \$0.00 | 0.00% | |
| VEBA | \$3.00 | \$57.44 | -\$54.44 | -1814.67% | |
| Health Insurance | \$4,785.00 | \$6,454.48 | -\$1,669.48 | -34.89% | |
| Life Insurance | \$50.00 | \$76.18 | -\$26.18 | -52.36% | |
| Cleaning Supplies | \$0.00 | \$52.50 | -\$52.50 | 0.00% | COVID |
| Motor Fuels | \$2,500.00 | \$1,468.99 | \$1,031.01 | 41.24% | |
| Lubricants & Additives | \$300.00 | \$483.66 | -\$183.66 | -61.22% | |
| Other Operating Supplies | \$500.00 | \$444.07 | \$55.93 | 11.19% | |
| Uniforms | \$500.00 | \$0.00 | \$500.00 | 100.00% | |
| Tires | \$500.00 | \$0.00 | \$500.00 | 100.00% | |
| Landscaping Materials | \$500.00 | \$0.00 | \$500.00 | 100.00% | |
| Repair/Maint - Bldg & Equip | \$35,000.00 | \$30,585.69 | \$4,414.31 | 12.61% | |
| Small Tools & Equipment | \$800.00 | \$1,568.53 | -\$768.53 | -96.07% | |
| Professional Services - Misc | \$3,000.00 | \$5,006.36 | -\$2,006.36 | -66.88% | |
| Postage | \$0.00 | \$94.68 | -\$94.68 | 0.00% | |
| Meetings, Training, & Travel | \$0.00 | \$357.47 | -\$357.47 | 0.00% | |
| Workers Comp Insurance | \$1,409.00 | \$1,990.99 | -\$581.99 | -41.31% | |
| Electricity | \$650.00 | \$365.23 | \$284.77 | 43.81% | |
| Storm Water | \$150.00 | \$101.07 | \$48.93 | 32.62% | |
| Miscellaneous | \$100.00 | \$48.12 | \$51.88 | 51.88% | |
| Dept 49430 WATER DISTRIBU | \$80,449.00 | \$84,651.97 | -\$4,202.97 | -5.22% | |
| Dept 49440 WATER ADMINISTRATION | | | | | |
| Wages & Salaries | \$87,513.00 | \$62,838.30 | \$24,674.70 | 28.20% | |
| PERA | \$6,374.00 | \$4,438.61 | \$1,935.39 | 30.36% | |
| FICA | \$5,426.00 | \$3,672.31 | \$1,753.69 | 32.32% | |
| Medicare | \$1,269.00 | \$858.77 | \$410.23 | 32.33% | |
| ICMA | \$0.00 | \$0.00 | \$0.00 | 0.00% | |
| VEBA | \$475.00 | \$382.50 | \$92.50 | 19.47% | |
| Health Insurance | \$17,908.00 | \$8,238.98 | \$9,669.02 | 53.99% | |
| Life Insurance | \$179.00 | \$126.05 | \$52.95 | 29.58% | |
| Office Supplies | \$300.00 | \$341.82 | -\$41.82 | -13.94% | |
| Other Operating Supplies | \$200.00 | \$10.19 | \$189.81 | 94.91% | |
| Uniforms | \$500.00 | \$612.44 | -\$112.44 | -22.49% | |
| Small Tools & Equipment | \$300.00 | \$139.40 | \$160.60 | 53.53% | |
| Auditing | \$2,000.00 | \$2,473.62 | -\$473.62 | -23.68% | |
| Engineering | \$0.00 | \$0.00 | \$0.00 | 0.00% | |
| Legal Services | \$0.00 | \$48.00 | -\$48.00 | 0.00% | |
| Professional Services - Misc | \$1,000.00 | \$1,103.54 | -\$103.54 | -10.35% | |
| Telephone | \$3,700.00 | \$2,720.32 | \$979.68 | 26.48% | |



CITY OF MORA

Expenditure Guideline For Commission

Current Period: September 2020

| Last Dim Descr | 2020 YTD Budget | 2020 YTD Amt | 2020 YTD Balance | 2020 % of Budget Remain | Explanation |
|-------------------------------------|-----------------|--------------|------------------|-------------------------|-------------|
| Postage | \$250.00 | \$170.80 | \$79.20 | 31.68% | |
| Meetings, Training, & Travel | \$500.00 | \$176.51 | \$323.49 | 64.70% | COVID |
| Advertising | \$450.00 | \$120.36 | \$329.64 | 73.25% | |
| Contributions | \$0.00 | \$0.00 | \$0.00 | 0.00% | |
| Depreciation | \$333,300.00 | \$243,558.11 | \$89,741.89 | 26.93% | |
| Insurance | \$7,281.00 | \$5,512.86 | \$1,768.14 | 24.28% | |
| Workers Comp Insurance | \$2,705.00 | \$3,733.68 | -\$1,028.68 | -38.03% | |
| Bad Debts/NSF Checks | \$0.00 | \$0.00 | \$0.00 | 0.00% | |
| Dues & Subscriptions | \$900.00 | \$952.08 | -\$52.08 | -5.79% | |
| Miscellaneous | \$100.00 | \$23.00 | \$77.00 | 77.00% | |
| Payment Processing Expenses | \$2,250.00 | \$2,067.43 | \$182.57 | 8.11% | |
| Change in Pension | \$0.00 | \$0.00 | \$0.00 | 0.00% | |
| Cust UB/Collection | \$4,000.00 | \$2,052.36 | \$1,947.64 | 48.69% | |
| Interest Expense | \$23,825.00 | \$23,092.85 | \$732.15 | 3.07% | |
| Trf to General Fund | \$5,826.00 | \$0.00 | \$5,826.00 | 100.00% | |
| Dept 49440 WATER ADMINIS | \$508,531.00 | \$369,464.89 | \$139,066.11 | 27.35% | |
| Fund 652 WATER FUND | \$776,693.00 | \$563,339.93 | \$213,353.07 | 27.47% | |
| Fund 653 SEWER FUND | | | | | |
| Dept 49460 SEWER COLLECTION SYSTEM | | | | | |
| Wages & Salaries | \$16,399.00 | \$10,490.61 | \$5,908.39 | 36.03% | |
| PERA | \$1,178.00 | \$786.81 | \$391.19 | 33.21% | |
| FICA | \$1,017.00 | \$603.56 | \$413.44 | 40.65% | |
| Medicare | \$238.00 | \$141.14 | \$96.86 | 40.70% | |
| ICMA | \$0.00 | \$0.00 | \$0.00 | 0.00% | |
| VEBA | \$0.00 | \$43.13 | -\$43.13 | 0.00% | |
| Health Insurance | \$3,536.00 | \$2,356.39 | \$1,179.61 | 33.36% | |
| Life Insurance | \$35.00 | \$33.10 | \$1.90 | 5.43% | |
| Cleaning Supplies | \$0.00 | \$26.25 | -\$26.25 | 0.00% | COVID |
| Motor Fuels | \$3,000.00 | \$2,284.97 | \$715.03 | 23.83% | |
| Lubricants & Additives | \$100.00 | \$67.47 | \$32.53 | 32.53% | |
| Chemicals | \$1,000.00 | \$0.00 | \$1,000.00 | 100.00% | |
| Other Operating Supplies | \$500.00 | \$508.83 | -\$8.83 | -1.77% | |
| Tires | \$3,000.00 | \$1,840.94 | \$1,159.06 | 38.64% | |
| Repair/Maint - Bldg & Equip | \$30,000.00 | \$34,507.29 | -\$4,507.29 | -15.02% | |
| Small Tools & Equipment | \$1,000.00 | \$895.18 | \$104.82 | 10.48% | |
| Professional Services - Misc | \$10,000.00 | \$1,475.03 | \$8,524.97 | 85.25% | |
| Meetings, Training, & Travel | \$500.00 | \$50.00 | \$450.00 | 90.00% | COVID |
| Workers Comp Insurance | \$889.00 | \$73.76 | \$815.24 | 91.70% | |
| Rentals | \$500.00 | \$0.00 | \$500.00 | 100.00% | |
| Miscellaneous | \$300.00 | \$132.38 | \$167.62 | 55.87% | |
| Dept 49460 SEWER COLLECTI | \$73,192.00 | \$56,316.84 | \$16,875.16 | 23.06% | |
| Dept 49463 QUAMBA COLLECTION SYSTEM | | | | | |
| Wages & Salaries | \$2,583.00 | \$406.70 | \$2,176.30 | 84.25% | |
| PERA | \$190.00 | \$30.53 | \$159.47 | 83.93% | |
| FICA | \$160.00 | \$23.31 | \$136.69 | 85.43% | |
| Medicare | \$37.00 | \$5.46 | \$31.54 | 85.24% | |
| VEBA | \$0.00 | \$0.00 | \$0.00 | 0.00% | |
| Health Insurance | \$501.00 | \$77.40 | \$423.60 | 84.55% | |
| Life Insurance | \$5.00 | \$0.89 | \$4.11 | 82.20% | |
| Motor Fuels | \$100.00 | \$208.66 | -\$108.66 | -108.66% | |
| Lubricants & Additives | \$0.00 | \$25.98 | -\$25.98 | 0.00% | |
| Chemicals | \$0.00 | \$0.00 | \$0.00 | 0.00% | |



CITY OF MORA
Expenditure Guideline For Commission
 Current Period: September 2020

| Last Dim Descr | 2020 YTD Budget | 2020 YTD Amt | 2020 YTD Balance | 2020 % of Budget Remain | Explanation |
|--|--------------------|--------------------|--------------------|-------------------------|-------------|
| Other Operating Supplies | \$50.00 | \$0.00 | \$50.00 | 100.00% | |
| Repair/Maint - Bldg & Equip | \$3,000.00 | \$9.64 | \$2,990.36 | 99.68% | |
| Small Tools & Equipment | \$100.00 | \$0.00 | \$100.00 | 100.00% | |
| Professional Services - Misc | \$1,000.00 | \$0.00 | \$1,000.00 | 100.00% | |
| Meetings, Training, & Travel | \$0.00 | \$0.00 | \$0.00 | 0.00% | |
| Workers Comp Insurance | \$138.00 | \$10.69 | \$127.31 | 92.25% | |
| Miscellaneous | \$0.00 | \$0.00 | \$0.00 | 0.00% | |
| Dept 49463 QUAMBA COLLEC | \$7,864.00 | \$799.26 | \$7,064.74 | 89.84% | |
| Dept 49470 SEWER LIFT STATIONS | | | | | |
| Wages & Salaries | \$6,218.00 | \$7,274.27 | -\$1,056.27 | -16.99% | |
| PERA | \$465.00 | \$500.16 | -\$35.16 | -7.56% | |
| FICA | \$386.00 | \$416.26 | -\$30.26 | -7.84% | |
| Medicare | \$90.00 | \$97.39 | -\$7.39 | -8.21% | |
| ICMA | \$0.00 | \$0.00 | \$0.00 | 0.00% | |
| VEBA | \$0.00 | \$2.37 | -\$2.37 | 0.00% | |
| Health Insurance | \$1,095.00 | \$1,374.72 | -\$279.72 | -25.55% | |
| Life Insurance | \$12.00 | \$16.33 | -\$4.33 | -36.08% | |
| Motor Fuels | \$0.00 | \$0.00 | \$0.00 | 0.00% | |
| Lubricants & Additives | \$100.00 | \$0.00 | \$100.00 | 100.00% | |
| Chemicals | \$2,000.00 | \$0.00 | \$2,000.00 | 100.00% | |
| Other Operating Supplies | \$400.00 | \$0.00 | \$400.00 | 100.00% | |
| Repair/Maint - Bldg & Equip | \$20,000.00 | \$6,717.68 | \$13,282.32 | 66.41% | |
| Small Tools & Equipment | \$2,000.00 | \$0.00 | \$2,000.00 | 100.00% | |
| Professional Services - Misc | \$0.00 | \$0.00 | \$0.00 | 0.00% | |
| Workers Comp Insurance | \$329.00 | \$23.96 | \$305.04 | 92.72% | |
| Electricity | \$8,000.00 | \$8,882.59 | -\$882.59 | -11.03% | |
| Storm Water | \$150.00 | \$90.45 | \$59.55 | 39.70% | |
| Miscellaneous | \$250.00 | \$0.00 | \$250.00 | 100.00% | |
| Dept 49470 SEWER LIFT STAT | \$41,495.00 | \$25,396.18 | \$16,098.82 | 38.80% | |
| Dept 49480 WASTEWATER TREATMENT | | | | | |
| Wages & Salaries | \$153,017.00 | \$100,771.75 | \$52,245.25 | 34.14% | |
| PERA | \$11,061.00 | \$7,270.43 | \$3,790.57 | 34.27% | |
| FICA | \$9,487.00 | \$5,824.14 | \$3,662.86 | 38.61% | |
| Medicare | \$2,219.00 | \$1,361.69 | \$857.31 | 38.63% | |
| ICMA | \$0.00 | \$0.00 | \$0.00 | 0.00% | |
| VEBA | \$3.00 | \$53.67 | -\$50.67 | -1689.00% | |
| Health Insurance | \$32,088.00 | \$22,071.90 | \$10,016.10 | 31.21% | |
| Life Insurance | \$322.00 | \$278.49 | \$43.51 | 13.51% | |
| Lab Supplies | \$0.00 | \$0.00 | \$0.00 | 0.00% | |
| Cleaning Supplies | \$50.00 | \$72.38 | -\$22.38 | -44.76% | |
| Motor Fuels | \$5,000.00 | \$792.83 | \$4,207.17 | 84.14% | |
| Lubricants & Additives | \$500.00 | \$0.00 | \$500.00 | 100.00% | |
| Chemicals | \$3,000.00 | \$1,788.48 | \$1,211.52 | 40.38% | |
| Other Operating Supplies | \$2,500.00 | \$1,756.17 | \$743.83 | 29.75% | |
| Uniforms | \$500.00 | \$0.00 | \$500.00 | 100.00% | |
| Tires | \$500.00 | \$0.00 | \$500.00 | 100.00% | |
| Landscaping Materials | \$150.00 | \$0.00 | \$150.00 | 100.00% | |
| Repair/Maint - Bldg & Equip | \$20,000.00 | \$9,068.05 | \$10,931.95 | 54.66% | |
| Small Tools & Equipment | \$4,000.00 | \$442.48 | \$3,557.52 | 88.94% | |
| Professional Services - Misc | \$15,000.00 | \$14,194.62 | \$805.38 | 5.37% | |
| Telemetry Circuit Rental | \$0.00 | \$0.00 | \$0.00 | 0.00% | |
| Meetings, Training, & Travel | \$400.00 | \$0.00 | \$400.00 | 100.00% | COVID |
| Workers Comp Insurance | \$8,261.00 | \$670.59 | \$7,590.41 | 91.88% | |



CITY OF MORA
Expenditure Guideline For Commission
 Current Period: September 2020

| Last Dim Descr | 2020 YTD Budget | 2020 YTD Amt | 2020 YTD Balance | 2020 % of Budget Remain | Explanation |
|---------------------------------|-----------------|----------------|------------------|-------------------------|-------------|
| Electricity | \$50,000.00 | \$28,925.52 | \$21,074.48 | 42.15% | |
| Water | \$2,000.00 | \$1,159.87 | \$840.13 | 42.01% | |
| Natural Gas - Heat | \$5,500.00 | \$1,871.77 | \$3,628.23 | 65.97% | |
| Garbage Removal | \$2,500.00 | \$1,503.45 | \$996.55 | 39.86% | |
| Sewer | \$0.00 | \$0.00 | \$0.00 | 0.00% | |
| Storm Water | \$220.00 | \$186.21 | \$33.79 | 15.36% | |
| Rentals | \$0.00 | \$140.00 | -\$140.00 | 0.00% | |
| Miscellaneous | \$500.00 | \$143.88 | \$356.12 | 71.22% | |
| Dept 49480 WASTEWATER TR | \$328,778.00 | \$200,348.37 | \$128,429.63 | 39.06% | |
| Dept 49490 SEWER ADMINISTRATION | | | | | |
| Wages & Salaries | \$87,448.00 | \$70,852.52 | \$16,595.48 | 18.98% | |
| PERA | \$6,363.00 | \$5,037.90 | \$1,325.10 | 20.83% | |
| FICA | \$5,422.00 | \$4,124.05 | \$1,297.95 | 23.94% | |
| Medicare | \$1,268.00 | \$964.15 | \$303.85 | 23.96% | |
| ICMA | \$0.00 | \$0.00 | \$0.00 | 0.00% | |
| VEBA | \$475.00 | \$382.50 | \$92.50 | 19.47% | |
| Health Insurance | \$17,968.00 | \$10,135.27 | \$7,832.73 | 43.59% | |
| Life Insurance | \$180.00 | \$146.49 | \$33.51 | 18.62% | |
| Unemployment Benefit Pmts | \$0.00 | \$0.00 | \$0.00 | 0.00% | |
| Office Supplies | \$500.00 | \$341.82 | \$158.18 | 31.64% | |
| Other Operating Supplies | \$150.00 | \$10.19 | \$139.81 | 93.21% | |
| Uniforms | \$500.00 | \$973.37 | -\$473.37 | -94.67% | |
| Small Tools & Equipment | \$350.00 | \$962.39 | -\$612.39 | -174.97% | See Note F. |
| Auditing | \$2,000.00 | \$2,474.63 | -\$474.63 | -23.73% | |
| Engineering | \$5,000.00 | \$0.00 | \$5,000.00 | 100.00% | |
| Legal Services | \$0.00 | \$577.00 | -\$577.00 | 0.00% | |
| Professional Services - Misc | \$5,000.00 | \$1,715.70 | \$3,284.30 | 65.69% | |
| Telephone | \$3,800.00 | \$4,699.74 | -\$899.74 | -23.68% | |
| Postage | \$200.00 | \$170.80 | \$29.20 | 14.60% | |
| Meetings, Training, & Travel | \$1,000.00 | \$905.00 | \$95.00 | 9.50% | |
| Advertising | \$300.00 | \$15.36 | \$284.64 | 94.88% | |
| Depreciation | \$490,900.00 | \$356,024.70 | \$134,875.30 | 27.48% | |
| Insurance | \$14,385.00 | \$9,813.42 | \$4,571.58 | 31.78% | |
| Workers Comp Insurance | \$2,704.00 | \$269.05 | \$2,434.95 | 90.05% | |
| Bad Debts/NSF Checks | \$0.00 | \$0.00 | \$0.00 | 0.00% | |
| Dues & Subscriptions | \$2,765.00 | \$1,510.00 | \$1,255.00 | 45.39% | |
| Miscellaneous | \$1,500.00 | \$23.00 | \$1,477.00 | 98.47% | |
| Payment Processing Expenses | \$2,250.00 | \$2,067.43 | \$182.57 | 8.11% | |
| Property Tax Expense | \$1,600.00 | \$882.00 | \$718.00 | 44.88% | |
| Change in Pension | \$0.00 | \$0.00 | \$0.00 | 0.00% | |
| Cust UB/Collection | \$3,000.00 | \$2,052.36 | \$947.64 | 31.59% | |
| Interest Expense | \$34,005.00 | \$32,251.39 | \$1,753.61 | 5.16% | |
| Trf to General Fund | \$5,826.00 | \$0.00 | \$5,826.00 | 100.00% | |
| Trf to Debt Service Fund | \$0.00 | \$0.00 | \$0.00 | 0.00% | |
| Dept 49490 SEWER ADMINIST | \$696,859.00 | \$509,382.23 | \$187,476.77 | 26.90% | |
| Fund 653 SEWER FUND | \$1,148,188.00 | \$792,242.88 | \$355,945.12 | 31.00% | |
| | \$7,940,794.00 | \$5,152,147.30 | \$2,788,646.70 | 35.12% | |

**MORA MUNICIPAL UTILITIES**

Notes to the Financial Statements

For the Quarter Ended September 30, 2020

Revenues - The following notes attempt to explain the reason for revenues outside what would be expected as shown on the following reports.

- A. Lighting rebate received for utility-owned street lights
- B. Grant reimbursement received from Minnesota Public Facilities Authority for Wastewater Treatment Plant (WWTP) expenses relating to the reed bed.

Expenditures - The following notes attempt to explain the reason for expenditures outside what would be expected as shown on the following reports.

- C. Fire-resistant clothing purchased
- D. Deposit paid to MnDOT for installation of underground 15KV electrical lines
- E. Expenses relating to the electrical system survey being performed by DGR
- F. New computer purchased for wastewater

COVID: Departure from typical trends in monies collected or spent due to the COVID-19 pandemic.

Utility Billing Monthly Report

Calendar Year 2019

| Description | As of 1/31/2020 | As of 2/29/2020 | As of 3/31/2020 | As of 4/30/2020 | As of 5/31/2020 | As of 6/30/2020 | As of 7/31/2020 | As of 8/31/2020 | As of 9/30/2020 | As of 10/31/2020 | As of 11/30/2020 | As of 12/31/2020 |
|--|--------------------|--------------------|--------------------|--------------------|--------------------|--------------------|--------------------|--------------------|--------------------|---------------------|---------------------|---------------------|
| Total Account Balances | \$ 601,347.50 | \$ 551,698.11 | \$ 595,134.72 | \$ 616,922.85 | \$ 652,958.35 | \$ 725,179.76 | \$ 705,793.25 | \$ 790,994.12 | \$ 888,277.49 | \$ 618,748.50 | | |
| Current Period | \$ 555,704.84 | \$ 497,019.39 | \$ 532,608.19 | \$ 551,300.51 | \$ 579,482.47 | \$ 659,525.21 | \$ 545,317.99 | \$ 616,153.44 | \$ 579,109.88 | \$ 441,253.51 | | |
| 1 Period Overdue | \$ 28,985.02 | \$ 35,747.28 | \$ 32,808.33 | \$ 23,753.59 | \$ 25,596.14 | \$ 16,360.71 | \$ 111,589.98 | \$ 46,188.93 | \$ 163,212.84 | \$ 40,726.39 | | |
| 2 Periods Overdue | \$ 8,396.86 | \$ 11,454.21 | \$ 17,307.07 | \$ 19,021.53 | \$ 13,850.87 | \$ 14,200.48 | \$ 9,298.69 | \$ 101,298.20 | \$ 28,743.15 | \$ 19,557.39 | | |
| 3 Periods Overdue | \$ 8,471.17 | \$ 7,568.36 | \$ 12,342.36 | \$ 22,938.35 | \$ 34,120.00 | \$ 35,242.42 | \$ 39,776.30 | \$ 27,353.55 | \$ 117,211.62 | \$ 117,103.05 | | |
| Total Penalties Applied to Account | \$ 6,226.45 | \$ 6,190.49 | \$ 7,827.78 | \$ - | - | - | \$ - | \$ 5,744.83 | \$ 22,811.95 | \$ 8,593.96 | | |
| Past Due/Disconnection Notices Mailed (customer 30 days or more past due) * | 71 | 66 | 0 | 0 | 0 | 0 | 52 | 38 | 70 | 51 | | |
| Utility Disconnects | 0 | 6 | 0 | 0 | 0 | 0 | 0 | 13 | 3 | 2 | 0 | 0 |
| Missed Payments on Payment Agreement | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 3 | 0 | 0 | 0 |
| No Response to Past Due/Disc Notice/Door Tag | 0 | 6 | 0 | 0 | 0 | 0 | 0 | 13 | 0 | 2 | 0 | 0 |

* Does not include Quamba residents, customers with a payment agreement in place, and water only accounts.

COMMENTS:

Credit balance for '3 Periods Overdue' is due to pre-payment on accounts, energy assistance, and a solar connection credits.

**Monthly Utility Account Adjustments Report
For Adjustments \$50.00 or higher**

| DATE | SERVICE | QTY | AMOUNT | NOTES |
|----------|---|-----|--------|-------|
| OCT 2020 | | | | |
| | NO ADJUSTMENTS TO REPORT FOR OCTOBER, 2020 | | | |
| | | | | |
| | | | | |
| | | | | |