A. ROLL CALL
B. INVOCATION
C. REQUEST TO ADDRESS THE BOARD
D. APPROVAL OF MINUTES
   • Approval of Minutes from June 19, 2017
E. MONTHLY REPORTS
   • Financial
     o Myriad 2017 Engagement Letter & Pre-Audit Communication with Governance
   • Operations
   • Engineering
   • Human Resources
   • Safety Report
   • General Manager’s
     o Policy F-500 Fats, Oils & Grease Management Revision 1
F. BUSINESS
   • Action Report #2017-20 – South Elm Street Water Main Replacement
   • Action Report #2017-21 – Sludge Disposal
   • Action Report #2017-22 – Trihalomethane Rapid Response Analyzer (THM-RR)
   • Action Report #2017-23 – South WWTP – Extended Aeration Basins Improvement Project
   • Action Report #2017-24 – Canoe Creek Water Line Crossing – US41A (Walked in)
   • Consent to Annexation of Property on Borax Drive, Parcel #46-65, #46-58, #46-64 & #46-55
G. EXECUTIVE SESSION – Requested
   • To discuss matter regarding future acquisition of real property, in that publicity would likely affect the value of the property, pursuant to KRS 61.810 (1) (b)
Request to Address the Board
ACTION MINUTES OF MEETING
June 19, 2017
A. ROLL CALL

Present at the meeting was Commissioner Paul Bird, Chairman, who presided over the meeting, along with Commissioners George Jones, John Henderson, Gary Jennings, and Julie Wischer. General Manager, Tom Williams and Eric Shappell, Attorney were also present. Other Staff members present were Rodney Michael, Kevin Roberts, Todd Bowley, William “Buzzy” Newman, John Baker, Kathy Ambrose, Jeremy Duncan, and Patty Brown. Also in attendance were City Manager, Russell Sights, Donna Stinnett, Mike Vickers, and Erin Schmitt with “The Gleaner”.

B. INVOCATION – Rodney Michael

C. REQUEST TO ADDRESS THE BOARD – No Requests Made

D. APPROVAL OF MINUTES

- Approval of Minutes from May 15, 2017

Minutes were approved as submitted.

E. MONTHLY REPORTS

- Financial – Discussed and approved as submitted.

Todd Bowley reviewed the financials with the Board. Revenues continue to trend a little over budget, but usage is overall down in all categories with the biggest low usage numbers in residential. Most of the revenue gains have been through various things we have billed through wastewater services.

Mr. Bowley distributed the Capital Expenditures Report and explained that some changes have been made to better track and allocate funds for capital projects. This will be a better indication of what is available. The board discussed the new format and agreed it should better reflect the status of capital projects.

- Operations – Discussed and approved as submitted.

Rodney Michael commented about the work on the repair of Clay Street under the railroad and said that it should be completed soon. John Baker explained the sheet that was distributed showing the comparison of residential rates with cites in our area before and after our up upcoming rate increase and stormwater fee implementation.
• Engineering

_Discussed and approved as submitted._

• Human Resources

_Discussed and approved as submitted._

• Safety Report

_Discussed and approved as submitted._

• General Manager’s

_Tom Williams discussed the report with the board. He explained that the utility locate options are being considered and looking to see if there are any potential for savings available through bidding the services out._

- Policy D-540 Smoking & Use of Tobacco Products in HWU Facilities and Vehicles

_Motion was made and approved to accept Policy D-540, Smoking & Use of Tobacco Products in HWU Facilities and Vehicles. This change is being made to adopt the policy the City just approved to include vapor products in this policy._

F. BUSINESS

• Tabled Resolution #2017-07 – Sense of the Commission Regarding Cash Reserves and Payment in Lieu of Taxes to the City of Henderson – Remove from Table for Vote

_Resolution #2017-07 was taken off the table and voted on. Motion was made by Commissioner Julie Wischer and seconded by Gary Jennings to vote on resolution. The Resolution failed to pass with roll call vote as follows: Commissioner Paul Bird, NAY; Commissioner George Jones, NAY; Commissioner John Henderson, ABSTAIN; Commissioner Gary Jennings, NAY; Commissioner Julie Wischer, NAY._

• Action Report #2017-15 – Water Distribution Projects

_Motion was made and approved to accept Action Report #2017-15 for Water Distribution Projects which includes the engineering services for the Green River Road tank and a 20” water main extension on South Main Street from Hancock to just past Yeaman Avenue. This line will be necessary to serve any future development in the industrial areas on US 60 West and the Riverport. Strand Associates, Inc. was selected for both projects. The engineering projects are broken down as follows: Green River Road tank $23,000 for design and bidding; and South Main Street Water Line $68,000 for design and bidding. These projects will be appropriated from the remaining “Special Projects” line item in the 2015-16 FY Capital Budget._
• **Action Report #2017-16 – North Wastewater Treatment Plant – Demolition of Old Headworks**

Motion was made and approved to accept Action Report #2017-16 for NWWTP Demolition of Old Headworks and awarding the bid to the low bidder, Hazex, Inc. in the amount of $11,000 which includes $800 of contingency. Funds for this work will be taken out of the “Special Projects” line in the 2016-17 FY capital budget.

• **Action Report #2017-17 – Magnesium Slurry Chemical Bid**

Motion was made and approved to accept Action Report #2017-17 for the Magnesium Slurry Chemical Bid and awarding it to Brenntag Mid-South at a price of 0.2115 per pound. The award will be effective from June 20, 2017 through June 19, 2018, with the option of two one-year renewals. The purchase of these items are within the operating budget for chemicals.

• **Resolution #2017-18 – Adopting Succession Plan for Continuity of Government**

Approved Resolution #2017-18 for Adopting Succession Plan for Continuity of Government. Motion was made by Commissioner Julie Wischer and seconded by Commissioner John Henderson with Roll Call Vote as follows: Commissioner Paul Bird, AYE; Commissioner George Jones, AYE; Commissioner John Henderson, AYE; Commissioner Gary Jennings, AYE; and Commissioner Julie Wischer, AYE. The General Manager is hereby authorized to deliver this Resolution to the City of Henderson, and to communicate the above plan to the Director of the Henderson Emergency Management Agency.

• **Discuss Habitat for Humanity’s Request for Use of HWU Property**

The board discussed the request from Habitat for Humanity to use HWU property for a parking area if they purchase land adjacent to the Third Street Basin property. The board agreed to offer the use of the property with a revocable annual lease giving so many days to vacate if it is decided HWU needs the property for something else. A requirement that HWU be listed as “Additional Insured” was also stipulated. These terms just give a basis for negotiation.

G. **EXECUTIVE SESSION – Requested**

• To discuss matter which might lead to the appointment, discipline, or dismissal of an individual employee, pursuant to KRS 61.810 (1) (f)

Motion was made and approved to go into Executive Session to discuss matter which might lead to the appointment, discipline, or dismissal of an individual employee, pursuant to KRS 61.810 (1) (f).

Motion was made and approved to return to regular session.
F. BUSINESS (continued)

- Resolution #2017-19 Annual Merit Adjustment for Chief Financial Officer

Approved Resolution #2017-19 for the Annual Merit Adjustment for the Chief Financial Officer. The recommendation by the General Manager is to give a 5% merit increase. Motion was made by Commissioner Gary Jennings, and seconded by Commissioner Julie Wischer with roll call vote as follows: Commissioner Paul Bird, AYE; Commissioner George Jones, AYE; Commissioner John Henderson, AYE; Commissioner Gary Jennings, AYE; Commissioner Julie Wischer, AYE.

Motion was made and approved to adjourn.

The next regular monthly meeting will be held on Monday, July 17, 2017.
FINANCIAL REPORT
Henderson Water Utility

Financial Summary

For the Twelve Months Ended June 30, 2017

Preliminary
Henderson Water Utility  
_operating Revenues and Expenses Summary  
For the Twelve Months Ended June 30, 2017  
**Preliminary**

<table>
<thead>
<tr>
<th>June Actual</th>
<th>June Budget</th>
<th>Year to Date Actual</th>
<th>Year to Date Budget</th>
<th>Fiscal Year Budget</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Operating Revenues</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Water Sales</td>
<td>$731,230</td>
<td>$652,363</td>
<td>$7,459,287</td>
<td>$7,556,325</td>
</tr>
<tr>
<td>Water Penalties</td>
<td>2,844</td>
<td>2,370</td>
<td>29,580</td>
<td>28,435</td>
</tr>
<tr>
<td>Water Fees</td>
<td>4,370</td>
<td>4,022</td>
<td>62,411</td>
<td>48,265</td>
</tr>
<tr>
<td>Wastewater Services</td>
<td>905,930</td>
<td>929,677</td>
<td>10,899,185</td>
<td>10,768,458</td>
</tr>
<tr>
<td>Wastewater Penalties</td>
<td>4,312</td>
<td>3,161</td>
<td>47,436</td>
<td>37,932</td>
</tr>
<tr>
<td>Wastewater Fees</td>
<td>32,033</td>
<td>15,800</td>
<td>331,142</td>
<td>189,595</td>
</tr>
<tr>
<td>Total Operating Revenues</td>
<td>1,680,719</td>
<td>1,607,392</td>
<td>18,829,041</td>
<td>18,629,010</td>
</tr>
</tbody>
</table>

| Operating Expenses | |
|-------------------|-----------------|-----------------|-----------------|-----------------|
| Salaries and Wages | 309,148 | 351,654 | 4,106,815 | 4,571,497 | 4,571,497 |
| Payroll Taxes | 22,770 | 25,556 | 298,368 | 332,233 | 332,233 |
| Health Insurance | 103,036 | 122,778 | 1,270,179 | 1,473,333 | 1,473,333 |
| Pension Benefits | 56,492 | 65,689 | 748,979 | 853,956 | 853,956 |
| Workers Compensation | (534) | - | 79,380 | 99,836 | 99,836 |
| Other Employee Benefits | 1,046 | 2,105 | 17,575 | 25,263 | 25,263 |
| Car Allowance | 1,800 | 2,250 | 17,130 | 27,000 | 27,000 |
| Electricity | 232,523 | 145,684 | 1,905,657 | 1,748,205 | 1,748,205 |
| Natural Gas | 446 | 500 | 21,334 | 37,932 | 37,932 |
| Chemicals | 122,634 | 94,188 | 1,222,003 | 1,130,250 | 1,130,250 |
| Inventory Expense | 61,694 | 15,775 | 250,975 | 189,300 | 189,300 |
| Fuel | 10,474 | 10,123 | 101,341 | 121,475 | 121,475 |
| Tools & Small Equipment | 3,391 | 16,363 | 110,707 | 196,350 | 196,350 |
| Safety Supplies | 1,984 | 5,517 | 46,659 | 66,200 | 66,200 |
| Lab Supplies and Testing | 32,394 | 30,542 | 196,048 | 183,250 | - |
| Clothing/Cleaning Allowance | 1,324 | - | 25,340 | 19,525 | 19,525 |
| Vehicle Repair | 8,567 | 4,183 | 77,571 | 50,200 | 50,200 |
| Other Equipment Repair | 20,431 | 16,233 | 229,178 | 194,800 | 194,800 |
| Other Structures Repair | 41,016 | 28,350 | 350,160 | 340,200 | 340,200 |
| SCADA Expense | 1,863 | 3,743 | 39,919 | 44,914 | 44,914 |
| Administrative Services | 47,000 | 53,000 | 618,000 | 636,000 | 636,000 |
| Contractual Services | 20,262 | 12,602 | 633,730 | 1,113,400 | 1,113,400 |
| Contractual Labor | 18,791 | 17,183 | 184,865 | 206,200 | 206,200 |
| Sludge Hauling and Disposal | 80,656 | 55,455 | 375,137 | 305,000 | - |
| Professional Services | 5,584 | 2,917 | 35,034 | 35,000 | 35,000 |
| Equipment Rental | 3,229 | 5,517 | 47,699 | 64,215 | 64,215 |
| Audit Expense | - | - | 20,000 | 21,000 | 21,000 |
| Trust Fees | 51 | 500 | 306 | 6,000 | 6,000 |
| Public Contributions | - | 3,958 | 4,250 | 47,500 | 47,500 |
| Insurance | 67,072 | - | 276,545 | 292,005 | 292,005 |
| Technology Expense | 14,120 | 15,837 | 148,119 | 190,040 | 190,040 |
| Office & Field Supplies | 12,481 | 9,685 | 155,508 | 163,474 | 163,474 |
| Telephone | 8,156 | 6,137 | 71,422 | 73,647 | 73,647 |
| Medical Exams | 652 | 500 | 6,184 | 6,000 | 6,000 |
| Travel and Training | 7,819 | 6,322 | 58,126 | 75,866 | 75,866 |
| Dues and Subscriptions | 245 | 1,598 | 13,221 | 19,178 | 19,178 |
| Printing | 973 | 967 | 10,973 | 11,600 | 11,600 |
| Miscellaneous | 366 | 679 | 5,810 | 8,150 | 8,150 |
| Depreciation | 290,226 | 291,667 | 3,482,709 | 3,500,000 | 3,500,000 |
| Total Operating Expenses | 1,610,182 | 1,425,589 | 17,262,954 | 18,038,112 | 18,038,112 |

| Operating Income (Loss) | $70,537 | $181,803 | $1,566,087 | $590,898 | $590,898 |
## Henderson Water Utility
### Variance Analysis
#### For the Twelve Months Ended June 30, 2017

**Preliminary**

### Operating Revenues
<table>
<thead>
<tr>
<th></th>
<th>Actual</th>
<th>$</th>
<th>Budgeted</th>
<th>$</th>
<th>Favorable (Unfavorable) Variance</th>
<th>$</th>
<th>Percentage Difference</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Actual</td>
<td>$18,829,041</td>
<td></td>
<td></td>
<td>Budgeted</td>
<td>$18,629,010</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Favorable</td>
<td>$200,031</td>
<td></td>
<td></td>
<td>(Unfavorable)</td>
<td></td>
<td>1.07%</td>
</tr>
<tr>
<td></td>
<td>Percentage</td>
<td>1.07%</td>
<td></td>
<td></td>
<td>Difference</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

### Billable Gallons
<table>
<thead>
<tr>
<th></th>
<th>Through 6/30/17</th>
<th>2,392,632,985</th>
<th>Through 6/30/16</th>
<th>2,436,760,704</th>
<th>Difference</th>
<th>(44,127,719)</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Favorable</td>
<td>$775,158</td>
<td></td>
<td></td>
<td>Percentage</td>
<td>-1.81%</td>
</tr>
</tbody>
</table>

### Operating Expenses
<table>
<thead>
<tr>
<th></th>
<th>Actual</th>
<th>$17,262,954</th>
<th>Budgeted</th>
<th>$18,038,112</th>
<th>Favorable  (Unfavorable) Variance</th>
<th>$775,158</th>
<th>Percentage Difference</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Actual</td>
<td>$17,262,954</td>
<td></td>
<td></td>
<td>Budgeted</td>
<td>$18,038,112</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Favorable</td>
<td>$775,158</td>
<td></td>
<td></td>
<td>(Unfavorable)</td>
<td></td>
<td>4.30%</td>
</tr>
<tr>
<td></td>
<td>Percentage</td>
<td>4.30%</td>
<td></td>
<td></td>
<td>Difference</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

### Breakdown of Volumetric Differential For Eleven Months Ended

<table>
<thead>
<tr>
<th></th>
<th>Jun-17</th>
<th>Jun-16</th>
<th>Differential %</th>
</tr>
</thead>
<tbody>
<tr>
<td>Residential</td>
<td>595,249,402</td>
<td>617,533,189</td>
<td>-3.61%</td>
</tr>
<tr>
<td>Industrial (includes IP)</td>
<td>452,733,094</td>
<td>470,957,755</td>
<td>-3.87%</td>
</tr>
<tr>
<td>Commercial (includes Tyson &amp; HCWD)</td>
<td>1,344,650,489</td>
<td>1,348,269,760</td>
<td>-0.27%</td>
</tr>
<tr>
<td>Total</td>
<td>2,392,632,985</td>
<td>2,436,760,704</td>
<td>-1.81%</td>
</tr>
</tbody>
</table>

### Notes
This months financials are marked preliminary due to year end closing procedures being ongoing. Month only figures effected by June payables being recorded in early July (and will continue to be recorded as received). Year end close and audit preparation have begun, so YTD figures will change, upon final inventory, capital project and pension adjustments among others. Final June financials will be presented when closing completed.

### Revenue Summary:
Revenues are over budget for current year-to-date in total. Water sales trended below budget for the year, but are being offset by wastewater and other fees which have exceeded year-to-date budget. All three usage classes are below prior year levels continuing trend of overall usage decreases.

### Expense Summary:
Expenses continue under budget primarily due to payroll and related expenses being under budgeted amounts due to unfilled positions, etc. Utilities, Chemicals, Sludge Hauling/Disposal and Repairs/Maintenance continue to trend above budget for the year-to-date.
# Henderson Water Utility

## Capital Expenditures Report

For the Twelve Months Ended June 30, 2017

### Preliminary

## Construction In Progress:

**Previous Fiscal Year Project Carryingovers**

<table>
<thead>
<tr>
<th>Project #</th>
<th>Beginning Balance</th>
<th>Current MTD Activity</th>
<th>Current YTD Activity</th>
<th>Project to Date Balance</th>
<th>Fiscal Year Budget</th>
<th>Total Capital Budget</th>
<th>Action No.</th>
</tr>
</thead>
<tbody>
<tr>
<td>US 60 Reimbursable</td>
<td>1802-0019</td>
<td>$43,498</td>
<td>-</td>
<td>$101,147</td>
<td>$144,645</td>
<td>-</td>
<td>(1)</td>
</tr>
<tr>
<td>US 60W Water Booster Station</td>
<td>1802-0020</td>
<td>246,326</td>
<td>-</td>
<td>-</td>
<td>246,326</td>
<td>4,426</td>
<td>246,326</td>
</tr>
<tr>
<td>NWWTP Headworks Project</td>
<td>1802-0035</td>
<td>13,374,886</td>
<td>-</td>
<td>200,894</td>
<td>13,575,780</td>
<td>100</td>
<td>13,630,139</td>
</tr>
<tr>
<td>NWTP Rehab</td>
<td>1802-0036</td>
<td>1,543,166</td>
<td>-</td>
<td>142,367</td>
<td>1,685,533</td>
<td>24,407</td>
<td>1,685,533</td>
</tr>
<tr>
<td>SWTP Rehab</td>
<td>1802-0051</td>
<td>676,092</td>
<td>-</td>
<td>184,147</td>
<td>860,239</td>
<td>235,239</td>
<td>860,239</td>
</tr>
<tr>
<td>Countryview Subdivision- HWU portion</td>
<td>1802-0053</td>
<td>49,585</td>
<td>-</td>
<td>-</td>
<td>49,585</td>
<td>200,000</td>
<td>400,000</td>
</tr>
<tr>
<td>Countryview Stormwater- City Contrib</td>
<td>1802-0053</td>
<td>49,585</td>
<td>-</td>
<td>-</td>
<td>49,585</td>
<td>200,000</td>
<td>400,000</td>
</tr>
<tr>
<td>Frontier Tank Project</td>
<td>1802-0054</td>
<td>555,786</td>
<td>-</td>
<td>-</td>
<td>555,786</td>
<td>100</td>
<td>655,800</td>
</tr>
<tr>
<td>Atkinson Park Watershed</td>
<td>1802-0058</td>
<td>146,369</td>
<td>213</td>
<td>64,191</td>
<td>210,561</td>
<td>15,100</td>
<td>213,500</td>
</tr>
<tr>
<td>College Tank Project</td>
<td>1802-0059</td>
<td>12,799</td>
<td>2,885</td>
<td>14,783</td>
<td>27,582</td>
<td>30,000</td>
<td>450,252</td>
</tr>
<tr>
<td>Vine Street Tank Project</td>
<td>1802-0060</td>
<td>33,000</td>
<td>-</td>
<td>920,746</td>
<td>953,746</td>
<td>923,000</td>
<td>958,000</td>
</tr>
<tr>
<td>Finley Addition- HWU portion</td>
<td>1802-0061</td>
<td>6,657</td>
<td>-</td>
<td>26,561</td>
<td>33,218</td>
<td>33,218</td>
<td></td>
</tr>
<tr>
<td>Finley Addition- HCFC Contribution</td>
<td>1802-0061</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>1,380,406</td>
<td>1,380,406</td>
<td>(3)</td>
</tr>
<tr>
<td>South Clarifier Paint &amp; Pipe</td>
<td>1802-0063</td>
<td>185,715</td>
<td>-</td>
<td>-</td>
<td>185,715</td>
<td>100</td>
<td>215,000</td>
</tr>
<tr>
<td>North Main Street Pressure</td>
<td>1802-0064</td>
<td>24,128</td>
<td>16,257</td>
<td>345,526</td>
<td>369,654</td>
<td>40,100</td>
<td>350,000</td>
</tr>
<tr>
<td>SWTP Building</td>
<td>1802-0065</td>
<td>8,225</td>
<td>4,595</td>
<td>4,595</td>
<td>12,820</td>
<td>100</td>
<td>17,000</td>
</tr>
<tr>
<td>Sugar Creek Bank</td>
<td>1802-0066</td>
<td>6,849</td>
<td>-</td>
<td>28,452</td>
<td>35,301</td>
<td>100</td>
<td>50,000</td>
</tr>
<tr>
<td>S Main St Sewer</td>
<td>1802-0067</td>
<td>28,209</td>
<td>-</td>
<td>16,250</td>
<td>44,458</td>
<td>100</td>
<td>66,000</td>
</tr>
</tbody>
</table>

### Current Fiscal Year Capital Appropriations

<table>
<thead>
<tr>
<th>Project #</th>
<th>Beginning Balance</th>
<th>Current MTD Activity</th>
<th>Current YTD Activity</th>
<th>Project to Date Balance</th>
<th>Fiscal Year Budget</th>
<th>Total Capital Budget</th>
<th>Action No.</th>
</tr>
</thead>
<tbody>
<tr>
<td>S Elm Water Lines</td>
<td>1802-0069</td>
<td>-</td>
<td>23,140</td>
<td>98,540</td>
<td>98,540</td>
<td>51,315</td>
<td>51,315</td>
</tr>
<tr>
<td>NWWTP Clarifier Project</td>
<td>1802-0070</td>
<td>-</td>
<td>150,371</td>
<td>150,371</td>
<td>150,371</td>
<td>781,472</td>
<td>781,472</td>
</tr>
<tr>
<td>Clay St Sewer Repair Project</td>
<td>1802-0071</td>
<td>-</td>
<td>33,688</td>
<td>57,078</td>
<td>57,078</td>
<td>58,800</td>
<td>58,800</td>
</tr>
<tr>
<td>Riverdale Stormwater Project</td>
<td>1802-0072</td>
<td>-</td>
<td>26,888</td>
<td>26,888</td>
<td>10,000</td>
<td>10,000</td>
<td>N/A</td>
</tr>
<tr>
<td>SWWT Basin Renovations</td>
<td>1802-0073</td>
<td>-</td>
<td>124,600</td>
<td>136,201</td>
<td>136,201</td>
<td>116,000</td>
<td>2,530,000</td>
</tr>
<tr>
<td>Fiber Optic Connect to City</td>
<td>1802-0074</td>
<td>-</td>
<td>10,202</td>
<td>16,261</td>
<td>16,261</td>
<td>30,000</td>
<td>30,000</td>
</tr>
<tr>
<td>Emergency Generator System</td>
<td>1802-0075</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>20,000</td>
<td>20,000</td>
</tr>
<tr>
<td>SWTP Building</td>
<td>1802-0076</td>
<td>-</td>
<td>91,891</td>
<td>144,191</td>
<td>144,191</td>
<td>20,000</td>
<td>20,000</td>
</tr>
<tr>
<td>S Main St Water Main Project</td>
<td>1802-0077</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>68,000</td>
<td>68,000</td>
</tr>
<tr>
<td>Misc Stormwater Projects</td>
<td>1802-0078</td>
<td>-</td>
<td>219</td>
<td>9,189</td>
<td>9,189</td>
<td>50,000</td>
<td>50,000</td>
</tr>
</tbody>
</table>

### Unallocated Capital Funds

<table>
<thead>
<tr>
<th>Project #</th>
<th>Beginning Balance</th>
<th>Current MTD Activity</th>
<th>Current YTD Activity</th>
<th>Project to Date Balance</th>
<th>Fiscal Year Budget</th>
<th>Total Capital Budget</th>
<th>Action No.</th>
</tr>
</thead>
<tbody>
<tr>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>381,062</td>
<td>381,062</td>
</tr>
</tbody>
</table>

**Total Construction In Progress**

16,941,290

365,669

3,900,390

20,841,681

3,095,739

### Buildings and Improvements:

**Previous Fiscal Year Project Carryingovers**

| Admin Bldg Improvements | 1804-0014 | 269,525 | - | 3,344 | 272,869 | 100 | 280,000 | 15-25 |

**Current Fiscal Year Capital Appropriations**

| NWTP Office/Lab Remodel | 1804-0016 | - | - | 15,958 | 15,958 | 39,100 | 39,100 | 17-04/17-13 |
| NWTP Demolition of Old Headworks | 1804-0017 | - | - | - | - | 11,000 | 11,000 | 17-16 |

**Total Buildings and Improvements**

269,525

- | 19,301 | 288,826 | 50,200 |

### Equipment and Vehicles:

**Equipment:**

- Wondereware Historian
- Trench Protection Boxes
- IT Shelf & Servers
- Refrigerated Auto Sampler
- Cat Mini Excavator & Trailer
- Veam IT Network Backup

**Vehicles:**

- Ford F-450 Utility Crew Truck
- Ford F-350 Utility Supervisor Truck
- Short-Side Dump Bed

**Total Capital Expenditures**

$17,210,816

$381,573

$4,189,010

$21,399,826

$3,424,400

### Notes:

(1) Project being fully reimbursed by KY Dept of Transportation, no budgeted appropriation
(2) Project being funded 50% by City of Henderson, no budgeted appropriation
(3) Project being funded by HCFC, upon completion fixed assets were assumed by HWY, no budgeted appropriation
Henderson Water Utility
Financial Statements
For the Twelve Months Ended June 30, 2017
Preliminary
## Henderson Water Utility
### Statement of Net Position
#### June 30, 2017
#### Preliminary

### ASSETS AND DEFERRED OUTFLOWS

**Current assets:**
- Cash $6,787,165
- Unrestricted Investments $35,766
- Restricted Investments $-
- Accounts receivable $1,377,531
- Inventories $855,582
- Other current assets $64,247
- **Total current assets** $9,120,291

**Noncurrent assets:**
- Construction in progress $20,841,681
- Utility plant and equipment, net of accumulated depreciation $61,551,593
- Other assets $31,023
- **Total noncurrent assets** $82,424,297

**Deferred outflows of resources** $1,340,953

**Total assets and deferred outflows** $92,885,541

### LIABILITIES AND DEFERRED INFLOWS

**Current liabilities:**
- Accounts payable $356,618
- Retainage payable $38,136
- Deposits payable $86,998
- Accrued liabilities $1,828,295
- Current portion of long-term debt $-
- **Total current liabilities** $2,310,047

**Noncurrent liabilities:**
- Accrued pension liability $6,734,694
- Long-term debt $37,286,093
- **Total noncurrent liabilities** $44,020,787

**Deferred inflows of resources** $-

**Total liabilities and deferred inflows** $46,330,834

### NET POSITION

**Net investment in capital assets** $45,138,204
**Restricted for debt service** $-
**Unrestricted** $1,416,503

**Total net position** $46,554,707
Henderson Water Utility  
Statement of Revenues, Expenses, and Changes in Net Position  
For the Twelve Months Ended June 30, 2017  
Preliminary

<table>
<thead>
<tr>
<th>Year to Date</th>
<th>Year to Date</th>
<th>Year to Date</th>
<th>Year to Date</th>
<th>Year to Date</th>
<th>Fiscal Year</th>
</tr>
</thead>
<tbody>
<tr>
<td>Actual</td>
<td>Budget</td>
<td>Actual</td>
<td>Budget</td>
<td>Actual</td>
<td>Budget</td>
</tr>
<tr>
<td>Water sales and fees</td>
<td>$ 738,444</td>
<td>$ 658,754</td>
<td>$ 7,551,278</td>
<td>$ 7,633,025</td>
<td>$ 7,633,025</td>
</tr>
<tr>
<td>Wastewater services and fees</td>
<td>942,275</td>
<td>948,637</td>
<td>11,277,763</td>
<td>10,995,985</td>
<td>10,995,985</td>
</tr>
<tr>
<td>Total operating revenues</td>
<td>1,680,719</td>
<td>1,607,392</td>
<td>18,829,041</td>
<td>18,629,010</td>
<td>18,629,010</td>
</tr>
<tr>
<td>Salaries, wages, and benefits</td>
<td>493,758</td>
<td>570,032</td>
<td>6,538,426</td>
<td>7,383,118</td>
<td>7,383,118</td>
</tr>
<tr>
<td>Contractual services</td>
<td>175,573</td>
<td>147,007</td>
<td>1,914,769</td>
<td>1,945,815</td>
<td>2,081,815</td>
</tr>
<tr>
<td>Supplies and materials</td>
<td>233,895</td>
<td>172,506</td>
<td>1,953,073</td>
<td>1,906,350</td>
<td>1,723,100</td>
</tr>
<tr>
<td>Utilities expense</td>
<td>232,969</td>
<td>146,184</td>
<td>1,926,991</td>
<td>1,785,255</td>
<td>1,785,255</td>
</tr>
<tr>
<td>Repairs and maintenance</td>
<td>71,877</td>
<td>52,510</td>
<td>696,828</td>
<td>630,114</td>
<td>630,114</td>
</tr>
<tr>
<td>Other services and expenses</td>
<td>111,884</td>
<td>45,684</td>
<td>750,158</td>
<td>887,460</td>
<td>934,710</td>
</tr>
<tr>
<td>Depreciation</td>
<td>290,226</td>
<td>291,667</td>
<td>3,482,709</td>
<td>3,500,000</td>
<td>3,500,000</td>
</tr>
<tr>
<td>Total operating expenses</td>
<td>1,610,182</td>
<td>1,425,589</td>
<td>17,262,954</td>
<td>18,038,112</td>
<td>18,038,112</td>
</tr>
<tr>
<td>Operating income (loss)</td>
<td>70,537</td>
<td>181,803</td>
<td>1,566,087</td>
<td>590,898</td>
<td>590,898</td>
</tr>
<tr>
<td>Investment income</td>
<td>7,435</td>
<td>2,083</td>
<td>62,338</td>
<td>25,000</td>
<td>25,000</td>
</tr>
<tr>
<td>Other income</td>
<td>6,621</td>
<td>-</td>
<td>35,950</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>Interest expense</td>
<td>(79,389)</td>
<td>(82,617)</td>
<td>(981,608)</td>
<td>(991,409)</td>
<td>(991,409)</td>
</tr>
<tr>
<td>Amortization expense</td>
<td>1,392</td>
<td>(329)</td>
<td>4,656</td>
<td>(3,951)</td>
<td>(3,951)</td>
</tr>
<tr>
<td>Total nonoperating revenues (expenses)</td>
<td>(63,941)</td>
<td>(80,863)</td>
<td>(878,664)</td>
<td>(970,360)</td>
<td>(970,360)</td>
</tr>
<tr>
<td>Income (loss) before capital contributions and distributions</td>
<td>6,596</td>
<td>100,939</td>
<td>687,423</td>
<td>(379,462)</td>
<td>(379,462)</td>
</tr>
<tr>
<td>Capital contributions</td>
<td>33,339</td>
<td>20,833</td>
<td>1,544,321</td>
<td>250,000</td>
<td>250,000</td>
</tr>
<tr>
<td>Distribution to City of Henderson</td>
<td>(400,000)</td>
<td>(400,000)</td>
<td>(400,000)</td>
<td>(400,000)</td>
<td>(400,000)</td>
</tr>
<tr>
<td>Change in net position</td>
<td>(360,065)</td>
<td>(278,227)</td>
<td>1,831,744</td>
<td>(529,462)</td>
<td>(529,462)</td>
</tr>
<tr>
<td>Net position, end of period</td>
<td>$ 46,554,707</td>
<td>$ 44,449,465</td>
<td>$ 46,554,707</td>
<td>$ 44,193,501</td>
<td>$ 44,161,500</td>
</tr>
</tbody>
</table>

Henderson Water Utility  
Statement of Revenues, Expenses, and Changes in Net Position  
For the Twelve Months Ended June 30, 2017  
Preliminary
### Henderson Water Utility

#### Statement of Cash Flows

For the Twelve Months Ended June 30, 2017

Preliminary

<table>
<thead>
<tr>
<th></th>
<th>June</th>
<th>Year to Date</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>CASH FLOWS FROM OPERATING ACTIVITIES</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Receipts from customers</td>
<td>$1,649,090</td>
<td>$18,508,377</td>
</tr>
<tr>
<td>Payments for goods and services</td>
<td>(704,795)</td>
<td>(6,880,697)</td>
</tr>
<tr>
<td>Payments for employees</td>
<td>(510,888)</td>
<td>(6,596,690)</td>
</tr>
<tr>
<td>Net cash provided (used) by operating activities</td>
<td>433,407</td>
<td>5,030,990</td>
</tr>
<tr>
<td><strong>CASH FLOWS FROM NONCAPITAL FINANCING ACTIVITIES</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Distribution to City of Henderson</td>
<td>(400,000)</td>
<td>(400,000)</td>
</tr>
<tr>
<td>Net cash provided (used) by noncapital financing activities</td>
<td>(400,000)</td>
<td>(400,000)</td>
</tr>
<tr>
<td><strong>CASH FLOWS FROM CAPITAL AND RELATED FINANCING ACTIVITIES</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Acquisition and construction of capital assets</td>
<td>(254,084)</td>
<td>(3,373,109)</td>
</tr>
<tr>
<td>Principal payments on long-term debt</td>
<td>-</td>
<td>(5,136,146)</td>
</tr>
<tr>
<td>Interest payments on long-term debt</td>
<td>-</td>
<td>(981,131)</td>
</tr>
<tr>
<td>Bond proceeds, net of closing costs</td>
<td>-</td>
<td>2,468,578</td>
</tr>
<tr>
<td>Capital contributions</td>
<td>33,339</td>
<td>156,449</td>
</tr>
<tr>
<td>Net cash provided (used) by capital and related financing activities</td>
<td>(220,745)</td>
<td>(6,865,359)</td>
</tr>
<tr>
<td><strong>CASH FLOWS FROM INVESTING ACTIVITIES</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Investment and other income received</td>
<td>14,052</td>
<td>111,726</td>
</tr>
<tr>
<td>Investments proceeds</td>
<td>-</td>
<td>741,889</td>
</tr>
<tr>
<td>Investments purchases</td>
<td>-</td>
<td>(207,031)</td>
</tr>
<tr>
<td>Net cash provided (used) by investing activities</td>
<td>14,052</td>
<td>646,584</td>
</tr>
<tr>
<td>Net increase (decrease) in cash</td>
<td>(173,286)</td>
<td>(1,587,785)</td>
</tr>
<tr>
<td>Cash, beginning of period</td>
<td>$6,960,451</td>
<td>$8,374,950</td>
</tr>
<tr>
<td>Cash, end of period</td>
<td>$6,787,165</td>
<td>$6,787,165</td>
</tr>
</tbody>
</table>
July 14, 2017

To the Board of Commissioners and Todd Bowley, Chief Financial Officer
Henderson Water Utility - City of Henderson, Kentucky - Water and Sewer Commission

We are pleased to confirm our understanding of the services we are to provide Henderson Water Utility for the year ended June 30, 2017.

We will audit the financial statements of Henderson Water Utility, which comprise the statement of net position as of June 30, 2017, and the related statements of revenues, expenses, and changes in net assets and cash flows for the year then ended, and the related notes to the financial statements (the basic financial statements). Accounting standards generally accepted in the United States of America provide for certain required supplementary information (RSI), such as management’s discussion and analysis (MD&A), to supplement Henderson Water Utility’s basic financial statements. Such information, although not a part of the basic financial statements, is required by the Governmental Accounting Standards Board who considers it to be an essential part of financial reporting for placing the basic financial statements in an appropriate operational, economic, or historical context.

As part of our engagement, we will apply certain limited procedures to Henderson Water Utility’s RSI in accordance with auditing standards generally accepted in the United States of America. These limited procedures will consist of inquiries of management regarding the methods of preparing the information and comparing the information for consistency with management’s responses to our inquiries, the basic financial statements, and other knowledge we obtained during our audit of the basic financial statements. We will not express an opinion or provide any assurance on the information because the limited procedures do not provide us with sufficient evidence to express an opinion or provide any assurance. The following RSI is required by generally accepted accounting principles and will be subjected to certain limited procedures, but will not be audited:

1) Management’s Discussion and Analysis; and
2) Schedules of the Commission's proportionate share of net pension liabilities and pension contributions.

We have also been engaged to report on supplementary information other than RSI that accompanies Henderson Water Utility’s financial statements. We will subject the following supplementary information to the auditing procedures applied in our audit of the financial statements and certain additional procedures, including comparing and reconciling such information directly to the underlying accounting and other records used to prepare the financial statements or to the financial statements themselves, and other additional procedures in accordance with auditing standards generally accepted in the United States of America, and we will provide an opinion on it in relation to the financial statements as a whole, in a report combined with our auditor’s report on the financial statements:

1) Supplemental Schedule of Revenues, Expenses, and Changes in Net Assets by Division.

Audit Objectives

The objective of our audit is the expression of an opinion as to whether your financial statements are fairly presented, in all material respects, in conformity with U.S. generally accepted accounting principles and to report on the fairness of the supplementary information referred to in the second paragraph when considered in relation to the financial statements as a whole. Our audit will be conducted in accordance with auditing standards generally accepted in the United States of America and the standards for financial audits contained in Government Auditing Standards, issued by the Comptroller General of the United States, and will include tests of the accounting records of Henderson Water Utility and other procedures we consider necessary to enable us to express such an opinion. We will issue a written report upon completion of our audit of Henderson Water Utility’s
financial statements. Our report will be addressed to the Board of Commissioners of Henderson Water Utility - City of Henderson, Kentucky - Water and Sewer Commission. We cannot provide assurance that an unmodified opinion will be expressed. Circumstances may arise in which it is necessary for us to modify our opinion or add emphasis-of-matter or other-matter paragraphs. If our opinion is other than unmodified, we will discuss the reasons with you in advance. If, for any reason, we are unable to complete the audit or are unable to form or have not formed an opinion, we may decline to express an opinion or issue reports, or may withdraw from this engagement.

We will also provide a report (that does not include an opinion) on internal control related to the financial statements and compliance with the provisions of laws, regulations, contracts, and grant agreements, noncompliance with which could have a material effect on the financial statements as required by Government Auditing Standards. The report on internal control and on compliance and other matters will include a paragraph that states (1) that the purpose of the report is solely to describe the scope of testing of internal control and compliance, and the results of that testing, and not to provide an opinion on the effectiveness of the entity’s internal control on compliance, and (2) that the report is an integral part of an audit performed in accordance with Government Auditing Standards in considering the entity’s internal control and compliance. The paragraph will also state that the report is not suitable for any other purpose. If during our audit we become aware that Henderson Water Utility is subject to an audit requirement that is not encompassed in the terms of this engagement, we will communicate to management and those charged with governance that an audit in accordance with U.S. generally accepted auditing standards and the standards for financial audits contained in Government Auditing Standards may not satisfy the relevant legal, regulatory, or contractual requirements.

Audit Procedures—General

An audit includes examining, on a test basis, evidence supporting the amounts and disclosures in the financial statements; therefore, our audit will involve judgment about the number of transactions to be examined and the areas to be tested. An audit also includes evaluating the appropriateness of accounting policies used and the reasonableness of significant accounting estimates made by management, as well as evaluating the overall presentation of the financial statements. We will plan and perform the audit to obtain reasonable assurance about whether the financial statements are free of material misstatement, whether from (1) errors, (2) fraudulent financial reporting, (3) misappropriation of assets, or (4) violations of laws or governmental regulations that are attributable to the government or to acts by management or employees acting on behalf of the government. Because the determination of abuse is subjective, Government Auditing Standards do not expect auditors to provide reasonable assurance of detecting abuse.

Because of the inherent limitations of an audit, combined with the inherent limitations of internal control, and because we will not perform a detailed examination of all transactions, there is a risk that material misstatements may exist and not be detected by us, even though the audit is properly planned and performed in accordance with U.S. generally accepted auditing standards and Government Auditing Standards. In addition, an audit is not designed to detect immaterial misstatements or violations of laws or governmental regulations that do not have a direct and material effect on the financial statements. However, we will inform the appropriate level of management of any material errors, fraudulent financial reporting, or misappropriation of assets that comes to our attention. We will also inform the appropriate level of management of any violations of laws or governmental regulations that come to our attention, unless clearly inconsequential, and of any material abuse that comes to our attention. Our responsibility as auditors is limited to the period covered by our audit and does not extend to later periods for which we are not engaged as auditors.

Our procedures will include tests of documentary evidence supporting the transactions recorded in the accounts, and may include tests of the physical existence of inventories, and direct confirmation of receivables and certain other assets and liabilities by correspondence with selected individuals, funding sources, creditors, and financial institutions. We will request written representations from your attorneys as part of the engagement, and they may bill you for responding to this inquiry. At the conclusion of our audit, we will require certain written representations from you about your responsibilities for the financial statements; compliance with laws, regulations, contracts, and grant agreements; and other responsibilities required by generally accepted auditing standards.
Audit Procedures—Internal Control

Our audit will include obtaining an understanding of the government and its environment, including internal control, sufficient to assess the risks of material misstatement of the financial statements and to design the nature, timing, and extent of further audit procedures. Tests of controls may be performed to test the effectiveness of certain controls that we consider relevant to preventing and detecting errors and fraud that are material to the financial statements and to preventing and detecting misstatements resulting from illegal acts and other noncompliance matters that have a direct and material effect on the financial statements. Our tests, if performed, will be less in scope than would be necessary to render an opinion on internal control and, accordingly, no opinion will be expressed in our report on internal control issued pursuant to Government Auditing Standards.

An audit is not designed to provide assurance on internal control or to identify significant deficiencies or material weaknesses. However, during the audit, we will communicate to management and those charged with governance internal control related matters that are required to be communicated under AICPA professional standards and Government Auditing Standards.

Audit Procedures—Compliance

As part of obtaining reasonable assurance about whether the financial statements are free of material misstatement, we will perform tests of Henderson Water Utility’s compliance with the provisions of applicable laws, regulations, contracts, agreements, and grants. However, the objective of our audit will not be to provide an opinion on overall compliance and we will not express such an opinion in our report on compliance issued pursuant to Government Auditing Standards.

Other Services

We will also assist in preparing the financial statements and related notes of Henderson Water Utility in conformity with U.S. generally accepted accounting principles based on information provided by you. These nonaudit services do not constitute an audit under Government Auditing Standards and such services will not be conducted in accordance with Government Auditing Standards. We will perform the services in accordance with applicable professional standards. The other services are limited to the financial statement services previously defined. We, in our sole professional judgment, reserve the right to refuse to perform any procedure or take any action that could be construed as assuming management responsibilities.

Management Responsibilities

Management is responsible for establishing and maintaining effective internal controls, including evaluating and monitoring ongoing activities, to help ensure that appropriate goals and objectives are met; following laws and regulations; and ensuring that management and financial information is reliable and properly reported. Management is also responsible for implementing systems designed to achieve compliance with applicable laws, regulations, contracts, and grant agreements. You are also responsible for the selection and application of accounting principles, for the preparation and fair presentation of the financial statements and all accompanying information in conformity with U.S. generally accepted accounting principles, and for compliance with applicable laws and regulations and the provisions of contracts and grant agreements.

Management is also responsible for making all financial records and related information available to us and for the accuracy and completeness of that information. You are also responsible for providing us with (1) access to all information of which you are aware that is relevant to the preparation and fair presentation of the financial statements, (2) additional information that we may request for the purpose of the audit, and (3) unrestricted access to persons within the government from whom we determine it necessary to obtain audit evidence.

Your responsibilities include adjusting the financial statements to correct material misstatements and for confirming to us in the written representation letter that the effects of any uncorrected misstatements aggregated by us during the current engagement and pertaining to the latest period presented are immaterial, both individually and in the aggregate, to the financial statements taken as a whole.

You are responsible for the design and implementation of programs and controls to prevent and detect fraud, and for informing us about all known or suspected fraud affecting the government involving (1) management, (2) employees who have significant roles in internal control, and (3) others where the fraud could have a material
effect on the financial statements. Your responsibilities include informing us of your knowledge of any allegations of fraud or suspected fraud affecting the government received in communications from employees, former employees, grantors, regulators, or others. In addition, you are responsible for identifying and ensuring that the government complies with applicable laws, regulations, contracts, agreements, and grants and for taking timely and appropriate steps to remedy fraud and noncompliance with provisions of laws, regulations, contracts or grant agreements, or abuse that we report.

You are responsible for the preparation of the supplementary information, which we have been engaged to report on, in conformity with U.S. generally accepted accounting principles. You agree to include our report on the supplementary information in any document that contains and indicates that we have reported on the supplementary information. You also agree to include the audited financial statements with any presentation of the supplementary information that includes our report thereon. Your responsibilities include acknowledging to us in the written representation letter that (1) you are responsible for presentation of the supplementary information in accordance with GAAP; (2) you believe the supplementary information, including its form and content, is fairly presented in accordance with GAAP; (3) the methods of measurement or presentation have not changed from those used in the prior period (or, if they have changed, the reasons for such changes); and (4) you have disclosed to us any significant assumptions or interpretations underlying the measurement or presentation of the supplementary information.

Management is responsible for establishing and maintaining a process for tracking the status of audit findings and recommendations. Management is also responsible for identifying and providing report copies of previous financial audits, attestation engagements, performance audits or other studies related to the objectives discussed in the Audit Objectives section of this letter. This responsibility includes relaying to us corrective actions taken to address significant findings and recommendations resulting from those audits, attestation engagements, performance audits, or other studies. You are also responsible for providing management’s views on our current findings, conclusions, and recommendations, as well as your planned corrective actions, for the report, and for the timing and format for providing that information.

You agree to assume all management responsibilities relating to the financial statements and related notes and any other nonaudit services we provide. You will be required to acknowledge in the management representation letter our assistance with preparation of the financial statements and related notes and that you have reviewed and approved the financial statements and related notes prior to their issuance and have accepted responsibility for them. Further, you agree to oversee the nonaudit services by designating an individual, preferably from senior management, with suitable skill, knowledge, or experience; evaluate the adequacy and results of those services; and accept responsibility for them.

**Engagement Administration, Fees, and Other**

We understand that your employees will prepare all cash, accounts receivable, or other confirmations we request and will locate any documents selected by us for testing.

We will provide copies of our reports to the Commission; however, management is responsible for distribution of the reports and the financial statements. Unless restricted by law or regulation, or containing privileged and confidential information, copies of our reports are to be made available for public inspection.

The audit documentation for this engagement is the property of Myriad CPA Group, LLC and constitutes confidential information. However, subject to applicable laws and regulations, audit documentation and appropriate individuals will be made available upon request and in a timely manner to a regulatory agency or its designee, a federal agency providing direct or indirect funding, or the U.S. Government Accountability Office for purposes of a quality review of the audit, to resolve audit findings, or to carry out oversight responsibilities. We will notify you of any such request. If requested, access to such audit documentation will be provided under the supervision of Myriad CPA Group, LLC personnel. Furthermore, upon request, we may provide copies of selected audit documentation to the aforementioned parties. These parties may intend, or decide, to distribute the copies or information contained therein to others, including other governmental agencies.

The audit documentation for this engagement will be retained for a minimum of five years after the report release date or for any additional period requested by a regulatory agency. If we are aware that a federal awarding agency
or auditee is contesting an audit finding, we will contact the party(ies) contesting the audit finding for guidance prior to destroying the audit documentation.

We expect to begin our audit on approximately September 11, 2017 and to issue our reports no later than October 31, 2017. Malcolm E. "Mac" Neel III, CPA, CFE is the engagement partner and is responsible for supervising the engagement and signing the reports or authorizing another individual to sign them.

Our fee for these services will be at our standard hourly rates plus out-of-pocket costs (such as report reproduction, word processing, postage, travel, copies, telephone, etc.) except that we agree that our gross fee, including expenses, will not exceed $20,000.00. Our standard hourly rates vary according to the degree of responsibility involved and the experience level of the personnel assigned to your audit. Our invoices for these fees will be rendered each month as work progresses and are payable on presentation. In accordance with our firm policies, work may be suspended if your account becomes 30 days or more overdue and may not be resumed until your account is paid in full. If we elect to terminate our services for nonpayment, our engagement will be deemed to have been completed upon written notification of termination, even if we have not completed our report. You will be obligated to compensate us for all time expended and to reimburse us for all out-of-pocket costs through the date of termination. The above fee is based on anticipated cooperation from your personnel and the assumption that unexpected circumstances will not be encountered during the audit. If significant additional time is necessary, we will discuss it with you and arrive at a new fee estimate before we incur the additional costs.

We appreciate the opportunity to be of service to Henderson Water Utility and believe this letter accurately summarizes the significant terms of our engagement. If you have any questions, please let us know. If you agree with the terms of our engagement as described in this letter, please sign the enclosed copy and return it to us.

Very truly yours,

Myriad CPA Group, LLC

RESPONSE:

This letter correctly sets forth the understanding of Henderson Water Utility.

Management signature: ____________________________

Title: __________________________________________

Date: __________________________________________

Governance signature: ____________________________

Title: __________________________________________

Date: __________________________________________
2017
AUDIT PLAN
FOR THE FISCAL YEAR ENDED
June 30, 2017

HENDERSON WATER UTILITY
CITY OF HENDERSON, KENTUCKY- WATER AND SEWER COMMISSION
# TABLE OF CONTENTS

<table>
<thead>
<tr>
<th>Section</th>
<th>Page(s)</th>
</tr>
</thead>
<tbody>
<tr>
<td>LETTER TO THE BOARD</td>
<td>1</td>
</tr>
<tr>
<td>SERVICES TO BE PROVIDED</td>
<td>2</td>
</tr>
<tr>
<td>THE AUDIT PROCESS SUMMARIZED</td>
<td>3-4</td>
</tr>
<tr>
<td>ENGAGEMENT TEAM</td>
<td>5</td>
</tr>
<tr>
<td>OUR RESPONSIBILITY UNDER U.S. GENERALLY ACCEPTED AUDITING STANDARDS AND GOVERNMENT AUDITING STANDARDS</td>
<td>6</td>
</tr>
<tr>
<td>PLANNED SCOPE, TIMING OF THE AUDIT, AND OTHER</td>
<td>7</td>
</tr>
</tbody>
</table>
July 14, 2017

Board of Commissioners
Henderson Water Utility

Dear Members of the Board:

The team at Myriad CPA Group, LLC is pleased to provide you with our assurance services for the fiscal year ended June 30, 2017. The attached information was developed by our audit team to provide you with information relevant to the audit in order to assist you in the process and enhance our mutual understanding of what the audit will entail.

In the audit plan for the fiscal year ended June 30, 2017, we provide you with an overview of the services provided, the engagement team assigned to the audit, our responsibility, and the planned scope, timing, and other matters concerning the audit.

The attached plan was designed for the audit of the financial statements and related notes for the fiscal year ended June 30, 2017, and pertains to this period only. The contents of the plan were derived from our understanding of Henderson Water Utility, as well as organizations of similar structure and purpose. The design of our plan is to provide you with a better understanding of the audit process as well as fulfill the audit objectives necessary in obtaining reasonable assurance on the accuracy of the financial statements.

The team at Myriad CPA Group, LLC, appreciates the opportunity to be of service to your Organization and provide the assurance services as outlined in this plan. Our audit team has a deep commitment to quality and professionalism in providing assurance services to our clients, which will be reflected throughout the performance of the engagement.

Sincerely,

Myriad CPA Group, LLC
SERVICES TO BE PROVIDED

The following list outlines the specific objectives that we expect to reach in the performance of the audit. The engagement for the fiscal year ended June 30, 2017 was designed on a risk-oriented basis and its results will be communicated to you:

- An independent auditors' report dated approximately October 31, 2017, which will express the auditors' opinion of the financial statements and related notes as of and for the year ended June 30, 2017.

- A report on internal control over financial reporting and on compliance and other matters based on an audit of basic financial statements performed in accordance with Government Auditing Standards.

- A letter to governance outlining significant audit findings including qualitative aspects of accounting practices, difficulties encountered in performing the audit, corrected and uncorrected misstatements, disagreements with management, management consultations with other accountants, other audit findings, as well as other matters involving required supplementary information.
THE AUDIT PROCESS SUMMARIZED

PLANNING

In the planning stages of our engagement, we perform the following procedures:

- The audit team obtains and updates an overall understanding of entity being audited. This involves developing a risk assessment of the Organization as well as internal controls pertaining to the Organization's processes. Significant factors considered during the planning stage include the economic conditions and environment of the Organization, current industry trends, Organization needs and challenges, operation and governance standards, new competitive developments, and other Organization processes.

- Certain requirements and expectations are communicated to management and governance of the Organization. This includes an overview of the scope and timing of the audit under Generally Accepted Auditing Standards and requirements regarding Governmental Auditing Standards communication standards. Such communication with management and those charged with governance is conveyed in the proposed audit plan and the engagement letter.

- Individuals with appropriate skills, knowledge, and experience are assigned to the audit team to meet the unique needs of the Organization being audited.

- A specific audit strategy is outlined, reflecting the understanding obtained of the Organization and its processes. The audit strategy is created based on the results of the team's assessment of risk pertaining to the Organization as well as the results of tests of controls performed for significant areas.

SUBSTANTIVE PROCEDURES

The following substantive procedures are performed to gather sufficient and appropriate evidence to express an opinion on the financial statements and related notes:

- Certain analytical procedures are applied to information presented in the financial statements of the Organization. Information relating to classes of transactions, account balances, and disclosures are substantiated and compared to supporting documentation.
CONCLUSION

In the concluding stages of the engagement, the independent auditors' report is prepared and communicated to the Organization being audited. The report expresses the auditors' opinion on the financial statements and related notes for the year under the audit.

OUR COMMITMENT TO QUALITY

In every stage of the audit, our engagement team's primary focus is on providing top-quality services to your Organization. The audit process is therefore client-oriented and the audit team is committed to answering any questions that might arise during the engagement, and performing our services in a manner that empowers your Organization to achieve its goals.

The various stages of the audit process are illustrated in the diagram provided below.

<table>
<thead>
<tr>
<th>AUDIT OBJECTIVES</th>
</tr>
</thead>
<tbody>
<tr>
<td>- Assurance plan</td>
</tr>
<tr>
<td>- Engagement team</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>PLANNING</th>
</tr>
</thead>
<tbody>
<tr>
<td>- Understanding entity</td>
</tr>
<tr>
<td>- Audit strategy</td>
</tr>
<tr>
<td>Develop an understanding of business conditions, background, and processes.</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>GENERAL</th>
</tr>
</thead>
<tbody>
<tr>
<td>- Analytics</td>
</tr>
<tr>
<td>- Tests of details</td>
</tr>
<tr>
<td>Consider above factors in evaluation of inherent risk of Organization.</td>
</tr>
<tr>
<td>Consider internal controls and risk of fraud in evaluation of control risk.</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>CONCLUSION</th>
</tr>
</thead>
<tbody>
<tr>
<td>- Expression of opinion</td>
</tr>
<tr>
<td>- Quality review</td>
</tr>
</tbody>
</table>
OUR ENGAGEMENT TEAM

We are pleased to introduce to your Organization the individuals assigned to the engagement who will be performing the audit as of and for the year ended June 30, 2017.

BRIAN CRAFTON, CPA
Partner of Myriad CPA Group, LLC
Bcrafton@myriadcpa.com
270-827-1577

MALCOLM "MAC" E. NEEL III, CPA, CFE
Partner of Myriad CPA Group, LLC
Mac.Neel@myriadcpa.com
270-827-1577

JACK SOMERVILLE, CPA, CFE, CGFM, CGMA, CICA
Audit & Assurance Director
Jack.Somerville@myriadcpa.com
270-691-8981

PATRICK NEEL
Staff Associate
Patrick.Neel@myriadcpa.com
270-691-8981
OUR RESPONSIBILITY UNDER U.S. GENERALLY ACCEPTED AUDITING STANDARDS AND GOVERNMENT AUDITING STANDARDS

As stated in our engagement letter dated July 14, 2017, our responsibility, as described by professional standards, is to express opinions about whether the financial statements prepared by management with your oversight are fairly presented, in all material respects, in conformity with U.S. generally accepted accounting principles. Our audit of the financial statements does not relieve you or management of your responsibilities.

As part of our audit, we will consider the internal control of Henderson Water Utility. Such considerations are solely for the purpose of determining our audit procedures and not to provide any assurance concerning such internal control.

As part of obtaining reasonable assurance about whether the financial statements are free of material misstatement, we will also perform tests of Henderson Water Utility’s compliance with certain provisions of laws, regulations, contracts, and grants. However, providing an opinion on compliance with those provisions is not an objective of our audit.

Generally accepted accounting principles provide for certain required supplementary information (RSI) to supplement the basic financial statements. Our responsibility with respect to the management’s discussion and analysis and the pension schedules, which supplement the basic financial statements, is to apply certain limited procedures in accordance with generally accepted auditing standards. However, the RSI will not be audited and, because the limited procedures do not provide us with sufficient evidence to express an opinion or provide any assurance, we will not express an opinion or provide any assurance on the RSI.

We have also been engaged to report on the schedules of revenues, expenses, and changes in net position by division, which accompany the financial statements but are not RSI. Our responsibility for this supplementary information, as described by professional standards, is to evaluate the presentation of the supplementary information in relation to the financial statements as a whole and to report on whether the supplementary information is fairly stated, in all material respects, in relation to the financial statements as a whole.
PLANNED SCOPE, TIMING OF THE AUDIT, AND OTHER

1. PLANNED SCOPE

An audit includes examining, on a test basis, evidence supporting the amounts and disclosures in the financial statements; therefore, our audit will involve judgment about the number of transactions to be examined and the areas to be tested.

Our audit will include obtaining an understanding of the entity and its environment, including internal control, sufficient to assess the risks of material misstatement of the financial statements and to design the nature, timing, and extent of further audit procedures. Material misstatements may result from (1) errors, (2) fraudulent financial reporting, (3) misappropriation of assets, or (4) violations of laws or governmental regulations that are attributable to the entity or to acts by management or employees acting on behalf of the entity. We will generally communicate our significant findings at the conclusion of the audit. However, some matters could be communicated sooner, particularly if significant difficulties are encountered during the audit where assistance is needed to overcome the difficulties or if the difficulties may lead to a modified opinion. We will also communicate any internal control related matters that are required to be communicated under professional standards.

2. TIMING OF THE AUDIT

We expect to begin our audit on approximately September 11, 2017 and issue our report on approximately October 31, 2017.

3. OTHER MATTERS

Malcolm E. Neel III, CPA, CFE is the engagement partner and is responsible for supervising the engagement and signing the report or authorizing another individual to sign it.

This information is intended solely for the use of the Board of Commissioners of Henderson Water Utility, and is not intended to be and should not be used by anyone other than these specified parties.

We greatly appreciate the opportunity to provide assurance services to your Organization and will leverage our expertise to perform the engagement in a manner that best positions your Organization to achieve its goals and objectives.

Very truly yours,

The audit team of Myriad CPA Group, LLC
OPERATIONS REPORT
General Operations:

Special Recognition:

At this year’s KY-TN AWWA Water Professionals Conference, our own Nancy Parker and Ashley (Cooper) Morgan received some well-deserved recognition for the work that they have performed.

Nancy received the Operator’s Meritorious Service Award, which represents consistent and outstanding service. Nancy has been with HWU for more than 21 years and pound-for-pound (even more so inch-for-inch) is among the hardest working and most passionate about her work that you will ever meet. There are likely many operators in the two states of Kentucky and Tennessee who would qualify to receive this award, but none more deserving than Nancy. And I couldn’t be happier for her.

Ashley received the Customer Service 2017 Award of Excellence for the work and effort she put forward during the time when Vine Street Tank was out of service for rehab. She followed up with each customer, some multiple times, to ensure that HWU’s response to their concerns wasn’t just a one-and-done exercise. She worked many long hours collecting samples and analyzing/communicating results. This, too, was well-deserved recognition.

Congratulations to both Nancy and Ashley. It’s good to have finally broken through the wall and have some of our folks and their work get recognized. Like many things that tend to get overlooked, it has been long overdue. It’s good to see consistent effort and quality work get recognized and rewarded.

If you get the opportunity, congratulate them and let them know that you appreciate them representing us as well as they have.

Thanks,

A. Treatment Plants – Overview:

1. Regulatory:

The CCR has been posted to the Henderson Water Utility website.
2. **Operational & Financial:**

   **Budget:** A meeting with Hazex was held a few weeks ago to address issues they were experiencing concerning tonnage levels and bridge/traffic regarding sludge hauling, particularly from the SWWTP. Due to treatment plant conditions and staff shortages, they had been experiencing loads that they considered “light”. This load weight issue along with the impact of construction traffic on the bridges and I-69 were causing them to be negatively impacted from an operation and profit standpoint in regards to their current contract. We have agreed to better monitor the loading at the Plant and have stipulated a 20-ton minimum per load going forward. Additionally, we have agreed to a 5% rate increase to compensate for the travel issues. This was the allowable percentage increase as stipulated in the contract terms. Our concession was to agree to this rate increase early to offset travel delay costs being incurred.

3. **System Water Quality:**

   **Water Quality Calls:** There were two water quality calls taken in June.

   a. **944 First Street**

      Customer complained of gurgling sounds from toilet, sinks, and washer. Upon arrival of the water quality specialist, it was found that the gurgles were from the sewer. The waste drain for the washing machine gurgles and sewer smell emits. Took Bac-T and chemistries from the kitchen and advised customer that water is not a problem, but the samples are standard procedure. Advised to look under house for any possible sewer leaks. All labs were in normal limits and Bac-T was negative. The customer was satisfied.

   b. **423 Canoe Creek Drive**

      Customer reported water smelled from every faucet. When the water quality specialist arrived, it was found that the customer just had carpet installed on Tuesday, and the smell started on Wednesday. Samples were taken from the master bathroom. The customer was advised to replace the damaged and very moldy aerator. They were also advised to open windows and air out the house. The specialist flushed the hydrant about 2 houses away from the house to circulate fresh water. All labs were within normal limits, and Bac-T was negative. The specialist called the customer and left a message with the results and advised to continue to air out the house frequently.

   Water Quality Specialists are continuing with community outreach. Refillable water bottles with our logo on them have arrived. We have received our water stand for community events. We are just waiting on a few additional parts to get it going. We have also considered renting a mobile aquarium from ORSANCO for Tri Fest next year.

   We are taking a proactive stance this summer with Crypto testing for our community pools and water features. At the end of each month samples are being taken from locations upstream from public pools and water features to test for Crypto.

   We are also testing for Cl2 residuals in the public water fountains located in the community.
4. **Personnel:**

**Staffing Levels:**

a. **Water Quality:** Full operational staff.

b. **North Water:** Full operational staff. Rick Green has now moved into his regular shift, and continues to train. Mark Sears has moved to days to help with projects until Pat Edwards’ retirement at the end of July.

c. **North Wastewater:** Full operational staff.

d. **South Water:** Full operational staff. With the hiring of Daryl Jarrett, the plant is fully staffed, though Daryl is still training and doing well.

e. **South Wastewater:** We continue to interview applicants for two vacancies at this plant. Recommendations and paperwork have been submitted and hope to have the positions filled by the end of the month.

f. **Environmental Compliance & Pretreatment:** Full operational staff.

g. **Plant & Pump Station Maintenance:** There is currently a vacancy for either an MT1 or MT2 position for press operations at the NWWTP. One staff member is out on Workers’ Compensation. With the completion of the maintenance training course at HCC, there will be a couple of our Tech 1 members eligible for promotion into Tech 2 positions.

h. **Treatment Intern:** We have not received any applications for this position.

5. **Projects:**

**Plant Beautification Efforts:** This effort is continuing throughout the plants on an on-going basis.

B. **North WTP:**

1. **Treatment Quality:**

   **Water Quality Goals:** All regulatory and Partnership for Safe Water treatment goals were met.

   **Distribution:** We are currently looking to install additional sampling sites in our distribution system to get a better representation and understanding of the water quality in our entire system. Currently, we are required by KDOW to have 30 regulatory sampling sites. We believe that it is necessary to add to this number even though regulations do not require us to.

   **Community Outreach:** Water treatment plant tours continue on a pretty regular basis.

2. **Operations & Projects:**

   **Treatment Challenges:** River turbidities remain high this month, causing the use of more chemical than normal to achieve treatment goals.
Construction Update: Remodeling work on the Water Quality lab began on July 10, 2017. The work is expected to take at least two weeks, but includes new flooring, ceiling, lighting, countertops, sinks, and painting.

Plant Optimization: Optimization this month has focused on limiting the Trihalomethane production in the plant using several techniques, including adjustment of Powdered Activated Carbon Feed Rates and feed points, lower Chlorine residuals on the Top of Filters, and advanced coagulation. Though results have not been extreme, the information gathered has helped fuel other avenues of thought on how to modify treatment to help with optimization overall.

Plant Beautification: Operators have started spring cleaning. Focus so far has been sorting through storage areas and eliminating clutter.

3. Budget:

Chemicals: Chemicals were over budget for the month due to river conditions and continued additional treatment for distribution water quality while work on Elm Street finishes up. Additional treatment was also needed for Disinfection By-Product removal. Additionally, there was a purchase of a chemical, which is purchased only a few times per year.

4. Average Water Treated and Water Pumped Data Trend:

![Graph of Average Water Treated and Water Pumped Data Trend]

Note: These values are current readings, but the actual billed readings are approximately 45 days behind.

C. North WWTP:

1. Treatment Quality:

Effluent Quality: All regulatory treatment goals were met. The EFF could be better, but taking two aeration basins out of service is a long process and will continue another 2 – 3 weeks. Elevated temperatures, elongated detention times, low flow and the necessity of using a much too large clarifier also contribute to a small degradation in quality. The EFF was well within limits and still high quality in appearance.

Biosolids Quality: Sludge solids remain at good quality. Sludge volume is up slightly due to a brief period of truck availability.

Reports: All reports have been submitted. The next round of EPA 503 Sludge testing begins next week.
2. **Operations & Projects:**

   **UV Disinfection:** Disinfection has been impressive. In a few instances, we have monitored “on lamp” or driver failure indications continuing as the temperature has increased. An initial telephone conference with Trojan indicated hydrogen sulfide corrosion to be the issue. We have installed monitoring devices and continue to monitor at this point.

   **Personnel:** One operator tests this Friday for his WW license.

   **Construction:** Bowling Construction has nearly completed the weir/baffle installation on both clarifiers as part of the rehab project. The new equipment has been ordered after a short delay.

   **Sludge Hauling:** Hauling has lessened most recently due to concentrating trucks at the SWWTP. We will see a few more loads go out in July to make up for a low-haul in June.

   **Dry Bed Sludge Hauling:** This continues to be a good choice in hauler and disposal. This was bid on July 12th and is the subject of an Action Report this month.

   **Treatment Challenges:** Operators continue to clean algae from the clarifier frequently. We are currently looking at technologies that will assist us in the prevention and mitigation of algae.

3. **Budget:**

   **Chemicals:** Chemical expenditures were over by 1.46% for the fiscal year due to basins being taken out of service over the year.

   **Fuel:** Under budget for the fiscal year.

   **Solids Management:** Under budget for the month.

D. **South WTP:**

1. **Treatment Quality:**

   **Water Quality Goals:** All monthly regulatory goals were met. We have had to fight hard to stay within the regulatory goals this month. The rain and up and down temperatures make controlling this plant very difficult.

2. **Operations & Projects:**

   **Personnel:** Daryl Jarrett is continuing his training and working out well.

   **Treatment Challenges:** Operations staff ran a chemical trial of Ferric Chloride this month. While the chemical showed promise in jar testing, plant trials did not follow through. Though the chemical caused several problems within the plant, operations staff were able to maintain regulatory compliance.

   **Projects:** The overhead door of the main building needs to be painted this summer. We also hope to install a catch basin style drain (or two) to address some drainage issues we are having at the back of the Main building.
**Maintenance:** High service #1 was taken out of service and worked on. They pulled the impeller and had it worked on, swapped the motor out for one that had been rebuilt, and in general cleaned it up. They did not get the altitude valve or diaphragm worked on but will come back and do that soon. They also believe the main breaker for this pump may be getting weak, because it has tripped out for no reason a couple of times.

3. **Budget:**

**Chemicals:** Chemicals were over budget for the month.

4. **Average Water Treated and Water Pumped Data Trend:**

![Graph showing SWTP Treated and SWTP Pumped data trend.]

Note: These values are current readings, but the actual billed readings are approximately 45 days behind.

**E. South WWTP:**

1. **Treatment Quality:**

   **Effluent Quality:** All treatment goals were met. The plant looks great. Single digit suspended solids on Effluent. It is not quite drinking water but looks very nice going back into the environment.

   **Bio Solids Quality:** Sludge solids are good. We are still running two trucks a day Monday thru Thursday and running two trucks over the weekend. Operators have been paying closer attention to filling the trucks as full as possible at Hazex's request.

2. **Operations & Projects:**

   **Personnel:** Two more potential new employees were interviewed. The SWWTP, after many years of employee stability, is going thru a huge lineup change with retiring employees (three this year alone). Within the next six months we will be staffed with only new employees and one seasoned Chief Operator (Chuck Gee). It’s a new beginning out here.

   **Aeration Basin Repairs:** # 6 aeration basin is working great. We have three basins in service. We are having one floating dock removed that is out of service. We are looking forward to the start of new construction on the basins.
3. **Budget:**

   **Chemicals:** Under budget for the month.

   **Solids Management:** Under budget for the month.

   **Monthly Total O&M:** Total monthly expenditures were under budget.

F. **Plant & Pump Station Maintenance:**

1. **Personnel:** Two Maintenance Tech positions are vacant. One will be filled at the beginning of the new fiscal year. The other position (assigned to press operations at the NWWTP) will be filled as soon as we get other, more critical positions filled at the SWWTP. One MT crew member is still on Workers’ Comp. (No Change)

2. **CSO Basin:** Pump #1 is back and needs to be installed. Ashby Electric is ending their repair operation; we were told that this was their last repair. Pump #2 has FAILED. We are in the process of getting new discharge elbows installed in the wet-well. We will install Pump #1 back in service and get Pump #2 to the repair shop for inspection.

3. **North Pump Stations:** We are in the process of evaluating each station so that levels can be adjusted to allow the station to operate more efficiently. This is an ongoing process that lags at times due to being short-staffed. We’ve adjusted two stations since the last report - Brenntag and Fair Street. (No Change)

4. **Training Classes:** Class is Completed. The guys really enjoyed the last 3-4 weeks of the class as it was more “Hands On” and covered topics that we use everyday in our jobs. Our intention is to build on this in the coming months and develop some training items that can be used to further the working knowledge of our guys. (No Change)

5. **SWWTP:** Basin #6 is now fully in service. The crew members have done an outstanding job. It’s extremely hard and tiring work.

6. **2nd St Pump Station:** Galloway was awarded the NEW Soft Start for Pump #1. The drive has been ordered, and the work is scheduled.

7. **SWTP:** The Low Service Pumps VFDs were “taken out” during a power outage that affected both of the South Plants. LV Dugger (Galloway) and Shane were able to get one pump running via a Starter that evening. We are in the process of getting prices and ordering the new drives.

8. **SWWTP:** Press #1 VFD failed. We are in the process of getting bids for a replacement. The Plant is using Press #2 while Press #1 is being repaired.

9. **NWWTP:** RAS #2 was repaired by KM Specialty and re-installed. After the Techs left, we found problems with the pump. The pump was not pumping and drawing high amps. They sent another Tech over the following week and have determined there is a problem with the motor. They pulled the pump out of service and took it back to their shop. We are waiting results of their inspection.

10. **NWWTP:** The Sludge Truck Loading conveyor failed this month. We rented a lift and determined that the drive motor bearings had failed. We removed the old motor and installed a new one. The old motor is non-repairable and has been scrapped.
11. **NWWTP:** We are in the process of removing any communication/power lines feeding the Old Headworks. We need to disconnect anything connected to the Fine Bar Screens so Hazex can store the units in one of our Sludge Storage Buildings. The Demo is scheduled for July 17th or 18th.

12. **North Fork Pump Station:** Pump #1 has been having an issue for a couple of weeks. The pump will show running, but nothing is on; No Flow, No Amps, etc. We got Richard Watson (Galloway) and our own Wayne Griffin involved, and they figured out that something had been changed in the program. They made a minor change and the pump is doing well now.

13. **Famous Pulls in June:**

   - A 2X4 section was removed from Pump #2 @ Janalee Dr PS
   - A sheet was removed from Pump #3 @ Fairmont PS
   - An article of clothing was removed from Pump #1 @ Dollar Store PS

G. **Pretreatment Program & FOG Services:**

1. **Industrial Pretreatment:** 2017/2018 permits have been prepared and are ready to be mailed to Industries. Changes have been made to Tyson Foods processing plant, Custom Resins, and Azteca Milling’s permits. Tyson Foods will continue its self-monitoring at outfall 001 for surcharging purposes, but sampling for permit compliance will be collected at outfall 003 (SWWTP influent manhole). Custom Resin will no longer be required to perform their required self-monitoring. It will be done by HWU. Azteca outfall 001 will be changed to a manhole directly in front of the pretreatment office.

2. **FOG Program:** The Salvation Army, Applebees, and Tumble Weed were inspected. All three were found to be in compliance with the FOG policy. A meeting was held with Mark Graebel of Graebel Plumbing, and Tri-state Septic Tank to discuss grease interceptor design.

H. **Automation Department:**

1. **(No Change)** The new US 60 West Water Booster Station has been tested. Automation components are functioning properly. It was observed that local area water pressure decreased to an unsatisfactory level whenever a pump was running, even after utilizing soft-start and throttling flow with valves. We are in the process of analyzing the water model for improved piping scenarios and have obtained pricing information for the possibility of using variable frequency drives.

2. **(No Change)** We continue to install pressure sensors around our north water system in order to assist in water modeling, water quality control, and to enhance our pressure monitoring. Installation requires setting a pit, tapping a water line, running conduit and wiring, and integrating into a nearby SCADA panel, usually a pump station. We have 13 sensors installed so far, with the latest located at the Hospital pump station. The pressure sensor information is transferred from SCADA to a GIS website at http://gis.hkywater.org/wpressurescada.html. PLCs have been programmed for 36 locations and will be activated as sensors are installed.

3. **(No Change)** A new magnetic flowmeter has been installed at the Third Street CSO Basin in order to record the volume of captured combined sewer being pumped to the NWWTP. The flowmeter has been incorporated into SCADA and continuously trended. We have yet to record any flow data from the Basin due to an apparent blockage in the force main that was discovered as a result of
installing the flowmeter. Crews are working to either clear the obstruction or to determine the reason why we cannot pump through the force main.

4. **(Ongoing)** We continue to install amperage meters on our pump station motors and have twenty-six stations fitted to date. We are updating each station with newer technology digital relays as well as installing current transformers.

5. Both VFDs located on the SWTP Low Service Pumps have failed. Maintenance is in process of replacing these units that were closing in on twenty years old before failure. We have looked over the specifications for new VFDs & will assist Maintenance with selection, installation, & programming.

6. Communications to the Hospital Pump Station, including a new pressure sensor located there, have been improved by installing a new radio. We were experiencing intermittent communications, which was unacceptable due to the new pressure sensor, and therefore, the need for continuous communication. We believe that the issue has been resolved with a new radio. However, since this station is located in a very low spot within the landscape and is adjacent to trees with thick foliage (all of which interferes with radio transmissions), we are watching it for a couple of weeks before implementing typical alarms based upon water pressure.

7. We are in the process of installing equipment at the 3rd Street CSO Basin so that any overflow is recorded in real-time via SCADA, similar to what we did at 2nd Street Pump Station.

8. We found and corrected an error in the PLC logic at the North Fork Pump Station (NFPS) that sends control signals to the VFDs. We found this error due to pump #1 failing to run.

9. We have replaced the SCADA control panel for Green Valley Baptist Association pump station. This control panel was quite old and was leaning to one side.
I. SOC General / HWU General:

1. Clay Street Sewer Repair:

We have completed repair work on the 24” line that crosses under the railroad tracks just south of Clay Street. We inserted a DR32.5 20” HDPE (High-density polyethylene) pipe inside the collapsed clay pipe. Although the piece we inserted is slightly smaller in diameter than the original line, the new insert is expected to carry sufficient flow, since the HDPE pipe has a lower coefficient of friction than clay pipe.

Collapsed section of clay pipe under the railroad.

20” HDPE pipe bolted to a steel guide, ready to be pulled through the collapsed 24” clay pipe under the Railroad Crossing.
2. **Stormwater Fee has gone into effect July 1:**

Henderson Water Utility’s rates increased on July 1. There are two parts to the increase:

- 5.85% increase for billings on and after July 1, 2017
- A flat “stormwater” fee ($5.00 for most residential users)

We created a two-page “Stormwater Fee FAQ” with questions and answers about the new stormwater fee. We published the document on social media and on our website. A copy of the document is included later in this report.
J. Customer Service: Customer Service Calls and Work Orders (NORTH):

1. The tabulation below shows calls we responded to last month. This tabulation by no means represents all of the calls that came in. We provided the following services:

<table>
<thead>
<tr>
<th>Water Line and Service Maintenance</th>
<th>Qty.</th>
<th>Sewer Line and Service Maintenance</th>
<th>Qty.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Water Main Repairs</td>
<td>5</td>
<td>Sewer Main Repairs</td>
<td>1</td>
</tr>
<tr>
<td>Water Service Line Repairs</td>
<td>4</td>
<td>Sewer Service Line Repairs</td>
<td>1</td>
</tr>
<tr>
<td>Water Meter Inspection</td>
<td>22</td>
<td>Sewer Manhole Repairs</td>
<td>2</td>
</tr>
<tr>
<td>Water Meter Changes</td>
<td>18</td>
<td>Sewer Main Cleaning</td>
<td>4</td>
</tr>
<tr>
<td>Water Meter Repair</td>
<td>2</td>
<td>Sewer Main Grease Removal</td>
<td>0</td>
</tr>
<tr>
<td>Water Meter Disconnected</td>
<td>1</td>
<td>Sewer Overflow Calls</td>
<td>4</td>
</tr>
<tr>
<td>Water Meter Reposition</td>
<td>0</td>
<td>Sewer Backup Calls</td>
<td>5</td>
</tr>
<tr>
<td>Water Meter Box Cleaned</td>
<td>3</td>
<td>Sewer Blocked Calls</td>
<td>1</td>
</tr>
<tr>
<td>Water Meter Locate</td>
<td>1</td>
<td>Sewer Odor Calls</td>
<td>2</td>
</tr>
<tr>
<td>Water Meter Leak Detection</td>
<td>12</td>
<td>Sewer Service Line Locates</td>
<td>1</td>
</tr>
<tr>
<td>Water Meter Consumption Check</td>
<td>8</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Fire Hydrant Repairs</td>
<td>2</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Low Water Pressure Calls</td>
<td>3</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Water Leak Calls</td>
<td>16</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Water Quality Calls</td>
<td>5</td>
<td></td>
<td></td>
</tr>
<tr>
<td>No Water Calls</td>
<td>3</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Turn Water Off/On Calls</td>
<td>11</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Install Temporary Hydrants</td>
<td>5</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Stormwater Maintenance</td>
<td>Qty.</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Storm line Repairs</td>
<td>5</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Storm Intake Repairs</td>
<td>3</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Stormwater Flooding Calls</td>
<td>1</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Clean/Unblock Intakes</td>
<td>9</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Pump Station Maintenance</td>
<td>Qty.</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Pump Station Repairs</td>
<td>12</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Pump Station Inspections</td>
<td>1</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Pump Station Cleaning</td>
<td>8</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Pump Station Maintenance</td>
<td>1</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Stormwater Flooding Calls</td>
<td>1</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Clean/Unblock Intakes</td>
<td>9</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Stormwater Maintenance</td>
<td>Qty.</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Storm line Repairs</td>
<td>5</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Storm Intake Repairs</td>
<td>3</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Stormwater Flooding Calls</td>
<td>1</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Clean/Unblock Intakes</td>
<td>9</td>
<td></td>
<td></td>
</tr>
<tr>
<td>New Services</td>
<td>Qty.</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Water Taps</td>
<td>3</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Sewer Taps</td>
<td>3</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Sewer Tap Locates</td>
<td>1</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Water Meter Installation</td>
<td>5</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Miscellaneous Services</td>
<td>Qty.</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Sink Hole Calls</td>
<td>7</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Inspect Misc. Items</td>
<td>10</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Smoke Test Lines</td>
<td>0</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Camera Inspect Lines</td>
<td>2</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Regulatory Issues</td>
<td>Qty.</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Downspout Removal Letters Mailed</td>
<td>0</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Downspout Letters Mailed To Date</td>
<td>225</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Downspout Removal Requests:</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Total Complied and Re-inspected</td>
<td>218</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

**HWU Service Call Summary**

- 1 - Water Line and Service Maintenance (Total Calls in 18 Sub-Categories)
- 2 - Stormwater Maintenance (Total Calls in 4 Sub-Categories)
- 3 - Pump Station Maintenance (Total Calls in 4 Sub-Categories)
- 4 - Sewer Line and Service Maintenance (Total Calls in 10 Sub-Categories)
- 5 - New Services (Total Calls in 4 Sub-Categories)
- 6 - Miscellaneous Services (Total Calls in 4 Sub-Categories)
- 7 - Regulatory Issues (Downspout Letters Mailed)
2. Rolling 2-Year History of Monthly HWU Service Calls.
K. Collection System:

1. We are currently focusing on the normal maintenance calls that we receive.

L. Distribution System:

1. We installed a 2” water main down Jefferson St. from Elm to Main St. We are now in the process of determining what lines tie onto an old 4” line that originates at Jefferson and Elm St. and runs down to Green St. and then down Green St. to Norris Ln. We would like to kill out this line due to its being no longer needed. There is a 12” line that runs the same distance as this line, and we have had to repair it quite a bit in the past.

2. We are in the process of putting together a parts list for completing the tie-in at Clay St. and S. Elm St. and running it to Washington St. to tie it in to a 12” main.

3. The scouring of the lines on Jefferson and Dixon St. should resume soon. The crews began placing the customers on temporary connections on May 8th.

4. N. Main Project: This project is complete.
M. Stormwater Phase II:

1. MS4 KYG2000 General Permit:

   Kentucky MS4 communities are currently grandfathered under the 04-01-2010 version of MS4 KYG2000 General Permit. That permit expired over two years ago, on 03-31-2015.

   A new Draft permit has been released for public comments, effective July 3, 2017. The public notice period will end on August 3, 2017.

   Staff at HWU are actively studying the new draft to make sure we remain in full compliance of the new rules and regulations.

2. Our MS4 (Municipal Separate Storm Sewer System) permit requires us to “lead by example” by observing “Good Housekeeping for Municipal Operations.” Each calendar quarter, city-wide department heads or their designees perform detailed inspections of their facilities. The inspections help to ensure that procedures are followed that will help safeguard the water in our rivers and streams.

   During the first part of July 2017, City-wide departments inspected their facilities and filled out a custom-created inspection questionnaire. The documents consist of 120 items in eight different categories, as follows:

   - Vehicle / Equipment Maintenance
   - Municipal Snow and Ice Removal
   - Parks / Open Space Maintenance
   - Materials Storage, Handling, Disposal
   - Street and Sidewalk Sweeping
   - Accidental Spills / Hazmat / Fueling / Waste Management
   - Administrative Considerations
   - Nearby Waterways

   As is always the case, all of the city departments responded promptly with quality inspection reports.

3. KSA, the Kentucky Stormwater Association, will hold its three-day Annual Meeting on July 19-21, 2017, in Bowling Green. Staff from Henderson Water Utility will participate in the meeting.

N. Information Technology Department:

1. Fiber to City (BAR# 2017-12): The fiber is spliced at 3rd and Main. We are currently waiting on the City to confirm the lease agreement with Crown Castle before HMP&L continues splicing the fiber cable at the Courthouse.

2. Cityworks: We are negotiating pricing on upgrade services. We are planning to use Timmons. They are a Cityworks partner and performed the initial installation, so they are familiar with our configuration. Currently we are using the same version originally installed in 2015. There are hundreds of fixes and improvements in the updated version. Improvements include changes to comment fields, Equipment Labor and Material (ELM), maps, and mobile applications. In
conjunction with this, we have created a mirror image of our production environment in an isolated lab environment so we can try the upgrade ourselves.

O. GIS Department:

1. We submitted our GIS data to VS Engineering to be used in the planning for the I-69 route through Henderson.

2. Warner Mattingly (Engineering Intern) has completed the fire hydrant inspection for this year’s fire hydrant painting project. He has also collected GPS locations on more than 1,200 residential water meters using our Trimble GeoXH mapping grade unit. Tony Samples has been adjusting the locations of our water meters in GIS using this GPS data.
Q 1. What is stormwater and why is it a problem?
A 1. Stormwater is water from rain and snowmelt. rooftops and paved areas not only prevent the water from being absorbed naturally but help it run off at a much faster rate. This runoff water contains pollutants that if unmanaged can affect the ecosystems and aquatic life in our streams and lakes.

Q 2. What is the purpose of the stormwater fee?
A 2. The stormwater fee was established to provide revenue to maintain and improve existing stormwater infrastructure in Henderson, to preserve, protect, and improve the water quality of stormwater runoff, and to develop a comprehensive stormwater management plan as mandated by the Federal government and the Kentucky Division of Water’s Stormwater Phase II Permit.

Q 3. What are the stormwater fees based on?
A 3. The stormwater fees are based on the size of the customer’s water meter. Most residential customers have a water meter size that is less than one inch. Many commercial and industrial customers have water meters that are larger than one inch. Meter size is being used as a proxy for the stormwater impacts associated with the size of a customer’s facility.

Q 4. Where does the money go that is collected from the stormwater fee?
A 4. Some of the important uses of this stormwater fee include:

1) Capital Improvement Projects to expand and rehabilitate existing stormwater conveyance systems.
2) Maintenance and repair of the city’s stormwater sewer system.
3) Development of stormwater design standards and regulations.
4) Improving stormwater quality through monitoring and reduction of illicit discharges and pollutants.
5) Public information and education concerning stormwater issues.

Q 5. Who has to pay the stormwater fee?
A 5. Everyone within the city that has water service from Henderson Water Utility has to pay the stormwater fee.

Q 6. How much is the charge for the stormwater fee?
A 6. Most Henderson residents will pay a monthly flat fee of $5.00 per water meter connection. Commercial and industrial customers will pay more if they have a water meter that is greater than one inch in size. For a detailed breakdown, see “Current Rates and Fees” on Henderson Water Utility’s website at http://www.hkywater.org/governance/rates-and-fees.

Q 7. Why is the city charging me for rain water?
A 7. You are not being charged for rain. The service charge is to manage programs to reduce or eliminate the pollution of stormwater, and to provide revenue to maintain and improve the existing stormwater infrastructure in Henderson.
Q 8. Hasn’t the city always had storm drains? Nothing has changed at my home/business. Why am I being charged now when I wasn’t just a few years ago?

A 8. Yes, the city has had storm drains for a long time. However, the federal regulations that require a comprehensive stormwater quality management program are relatively new. These regulations have only been in effect for cities with a population of 10,000 or more people since 2002. The stormwater fee will enable the city to meet its responsibilities to manage and expand the storm drain system, improve water quality, seek out and eliminate illicit runoff, educate citizens, and enforce pollution prevention measures and techniques.

Q 9. Am I still charged even if it doesn’t rain for a long time?

A 9. Yes. The pollution potential is actually greater when it has not rained in a long time because pollutants can build up on all impervious surfaces. In any storm event the initial runoff, or first flush, is the most contaminated. Contrary to what some people believe, stormwater charges are not based upon rainfall. Costs are incurred to reduce pollution, and to provide maintenance and improvements to the stormwater infrastructure. Rainwater is simply the carrier that transports the pollutants to open waterways.

Q 10. How was the rate for household stormwater fees developed?

A 10. The total amount of revenue generated by the stormwater fee represents only about half of what Henderson Water Utility spends each year for stormwater related activities. In recent years, HWU has taken more of the responsibility for maintenance and expansion of the stormwater system. The fees increase as meter size goes up, using meter size as a proxy for the size of a facility, which is related to stormwater impact.

Q 11. I only have a driveway and no other stormwater leaves my property. Why am I being charged the fee?

A 11. Everyone benefits from the city’s required Stormwater Management Plan, whether or not each of us has a storm sewer connected directly to our property. The runoff generated from stormwater is contributing to problems downstream. The approach being taken through this program recognizes that everyone contributes to the problem (runoff and pollution), and everyone will share in its benefits. (Improved water quality, reduced flooding, unimpaired access to roads, etc.)

Q 12. How will the fee be billed to me, and when will it start?

A 12. The fee will be added to the monthly utility bills as a separate line item. Billing will start in July 2017.
<table>
<thead>
<tr>
<th>Date</th>
<th>Crew #</th>
<th>Address</th>
<th>Comments</th>
<th>Rodney's Comments</th>
</tr>
</thead>
<tbody>
<tr>
<td>6/2/2017</td>
<td>135</td>
<td>219 Barker Rd.</td>
<td>Thank you.</td>
<td></td>
</tr>
</tbody>
</table>

16 Service Request Tags Given Out
83 Work Order Tags Given Out
81 Door Tags Returned
ENGINEERING REPORT
1. **North Wastewater Treatment Plant:**
   
   **Clarifier Repairs:** This project includes replacement of the metal rotating mechanisms on these two units, which we split out from the larger headworks project. Mark Bowling (MBI) is the contractor. Some work on demolition, concrete repairs, and weir replacement has been completed. Shop drawings on the equipment have been received and reviewed, but we don’t have a delivery date.

   The small project to demolish the old Headworks building superstructure is under way.

2. **South Wastewater Treatment Plant – Repair/Rehab of Extended Aeration Basins:**
   
   Geotechnical investigation on site is complete and we have reviewed the report. Final plans received and plans submitted to KDOW for approval of a construction permit. Bids were opened 14 July, and are the subject of an action report for this meeting. We bid this project two ways, with and without prevailing wages, to give us the option of securing some outside funding.

3. **Atkinson Park Sewershed Study - Myrene Drive Sewer Pump Station:** (no change since last report)
   
   Phased in five sections, design of these projects is progressing. We have several easements appraised, and have four signed on the Myrene FM portion of the work, and one on the Atkinson Park FM, from the Hospital, just north of 14th Street.

   The construction of a revamped Myrene Drive pump station is being studied further, to see if there are better alternatives for location and/or arrangement of this station in a cramped location without much room to maneuver. This may require temporary easements from surrounding property owners, and we have met with all those and are adjusting our plans based on their concerns.

   We have received the KDOW construction permit for the Spruce Drive portion of the project (which eliminates one pump station). This will not be bid until 2018 at the earliest. Have one easement for this segment signed and recorded.

   Easement documents on the North Elm Street portion of the Myrene force main segment were appraised as both right of way and an easement, in anticipation of the City possibly wanting to team with us on property impacts in that section from Villa Drive to Springwood Drive.

4. **South Water Treatment Plant – Rehab Projects:** (no change since last report)
   
   Several projects were included in a 2014 preliminary engineering report for the SWTP.

   **Update on Clearwell Project:** Bidding of the new 800,000 gallon prestressed tank is awaiting availability of funds, and we will likely not bid this until late in the year, if then. It’s possible this project segment will receive some outside funding.

   **Raw Water:** Plans for the Raw Water & Effluent Lines Relocations have received KDOW review and approval. New agreement with Big Rivers has cleared the way to bid this project, probably next fiscal year, when capital funds are available.

5. **Emergency Generators:**
   
   Kickoff of this project occurred on 2 June 2017. Making progress on setting the scope and potential costs for these improvements.
6. Future Water Distribution System Projects:
Looking ahead to possible/planned industrial development in the Riverport and other “south” areas of Henderson, we issued an RFP for engineering firms interested in design of a 20” water main located on S. Main Street from Hancock Street to Yeaman Avenue. This RFP also included painting of the Green River Road water tank. Award was made to Strand Associates, Inc., of Louisville, and we are working on a task order for both projects. Designs should proceed shortly.

7. Countryview Subdivision Stormwater Project:
Have submitted plans to Texas Gas for several crossings of their high pressure main, and met with their representative in the field in May 2016 to discuss our crossings and the permits required. HWU Staff working on plans and hoping to start construction on part of this project, this year.

8. College Tank Painting:
Opened bids on April 12th. Contract awarded to Preferred Sandblasting and Painting (they painted the Vine Street tank last year). Contracts signed, pre-construction meeting held on July 11th. Hoping to see contractor start by month’s end. Have reviewed progress with College staff, who have been very accommodating.

9. Graham Hill and Green River Road Pressure Zone Studies:
Have received a draft report from Strand on their Green River Road area study, which gave us several options, and we are looking at two or three small projects that might have a big impact. We met with Wauford on 26 May to discuss their draft report, and they have made minor changes to address our concerns; copies of the report are available for review on request. Neither of these projects is currently funded.

10. South Elm Street (Jefferson to Washington) Water Line:
Work now complete on street repairs and asphalt paving by the city’s contractor. Attempts to clean existing older lines on cross streets met with mixed success. An action report that continues this project is on the agenda tonight. It includes the two blocks that run from Clay to Washington, where we will be able to connect to a 20” line laid during the Downtown project. We are also retiring a problematic old 4” line in Green Street that dead ends at Norris Lane, which will require work in the middle of Green Street to switch services over to another line.

11. Clay Street Sewer Repair:
This 24” clay pipe crosses the CSX & former Illinois Central RR tracks just south of Clay Street, at the edge of the street. The line shows as existing on our 1918 system map, so it’s been a sound investment, but it’s broken in two spots under the tracks. We came up with an “internal band” system to repair it from the inside, but that didn’t work as planned. We declared an emergency and have now inserted a 500 mm (19.6 inch) HDPE pipe inside the old clay pipe. Work is wrapping up, this week.

12. Riverdale Court: (no change since last report)
Investigation in this area off South Main Street revealed a previously unknown storm sewer pipe that ties into the Downtown Interceptor near the River. Taking that line off the Interceptor and running a separated storm line to the River will allow about 2 acres of area to be taken off the combined system, at relatively low cost, so we’re working on a plan.
HUMAN RESOURCE REPORT
HWU Human Resources Summary: July 17, 2017

Staffing Levels:

1. Utility System Worker I [3 positions]: one employee started June 19th; second employee started June 26th; and third employee scheduled to start July 17th

2. Utility System Worker II [1 position]: second exam is scheduled for July 13th

3. Distribution System Operator [1 position]: interview scheduled for July 14th

4. Wastewater Treatment Operator I [2 positions]: background checks are in process on 2 candidates

5. Maintenance Technician I [2 positions]: received 2 candidate recommendations

6. SOC – Seasonal Worker [5 positions]: no request for action

7. Treatment Plants – Seasonal Worker [2 positions]: staffing agency working to fill 1 position; no request for action for 2nd position

Safety Report (as of 6/30/2017):

<table>
<thead>
<tr>
<th></th>
<th>HWU</th>
<th>Change</th>
</tr>
</thead>
<tbody>
<tr>
<td>Hours Worked</td>
<td>79,226</td>
<td>+ 13,797</td>
</tr>
<tr>
<td>Total Cases</td>
<td>3</td>
<td>0</td>
</tr>
<tr>
<td>→ Days Away/Restricted Time Cases</td>
<td>1</td>
<td>0</td>
</tr>
<tr>
<td>→ Days Away From Work Cases</td>
<td>2</td>
<td>0</td>
</tr>
<tr>
<td>→ Actual # Days Away From Work</td>
<td>133</td>
<td>0</td>
</tr>
<tr>
<td>→ Transfer/Restricted Cases</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>→ Actual # Days Restricted Duty</td>
<td>0</td>
<td>0</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Incident Rates</th>
<th>HWU</th>
<th>Change</th>
</tr>
</thead>
<tbody>
<tr>
<td>Total Recordable Rate</td>
<td>7.57</td>
<td>+ 7.57</td>
</tr>
<tr>
<td>→ DART Incident Rate</td>
<td>2.52</td>
<td>+ 2.52</td>
</tr>
<tr>
<td>→ DAFW Rate</td>
<td>5.05</td>
<td>+ 5.05</td>
</tr>
<tr>
<td>→ Trans / Restrict. Rate</td>
<td>0.00</td>
<td>0.00</td>
</tr>
</tbody>
</table>

- 2012 NAICS is the classification for Utilities: Water, Sewage, and other systems
- DART = Days Away, Restricted, or Transferred
- DAFW = Days Away From Work
- How incident rates are calculated: ([$# Cases] x 200,000) / Employee Hours Worked
- Change data compared to data at the end of the previous month.

- No recordable incidents in June.
- The June comprehensive fixed facility safety audits were conducted at the South Water and Wastewater Treatment Plants. No significant issues were identified at the South Water Treatment Plant. The only significant issue identified at the SWWTP is the outside lighting previously identified in March. HWU staff advised the outside lighting should be replaced in the near future. Both locations were last audited in March 2017.

Other:

Upcoming City-wide Events:

- Working with IS Manager to connect MSDS Online roll-out with HWU tablets
- Coordinating the Respirator Fit Testing with State Fire Rescue. Date notification is forthcoming.
SAFETY REPORT
A. Safety Committee:

There was a teleconference meeting and no there were no safety concerns. Training was discussed.

B. Training

Training performed in June:

1. Safety meetings are continuing for the crews at the SOC.
2. Annual Blood borne Pathogen training is being completed at the plants

C. The Safety Inspections:

1. Administration Building
   - No issues found during visits.

2. Systems Operation Center (SOC):
   - No issues found.

3. WTP North:
   - There were no significant safety issues found during periodic site visits. These visits unlike the complete audits below may not cover every area of the facility on the day visited. Site visit dates in June were on the 1st, 5th, 8th, 12th, 14th, 19th, and 21st.

4. WWTP North:
   - There were no significant safety issues found during periodic site visits. These visits unlike the complete audits below may not cover every area of the facility on the day visited. Site visit dates in June were on the 1st, 5th, 8th, 12th, 14th, 19th, and 21st.
5. **WTP South:**
   - See facility audit below.

6. **WWTP South:**
   - See facility audit below.

7. **Water Distribution/Collection System:**
   - There were no major safety issues with employees observed during safety site visits and proper PPE and signage was being used.

D. **Comprehensive Safety Audits:**

1. **South Water Treatment Plant:**
   There were no issues noted.

2. **South Waste Water Treatment Plant:**
   There were no significant issues other than outside lighting that should be replaced in the near future.

E. **Recordable Injuries:**

1. There were no recordable injuries in June.
GENERAL MANAGER’S REPORT
General Manager Report 17 July 2017

Regulatory Issues

**LTCP/CJ Termination, new KPDES Permit** and a **Local Plan Approval** agreed order are still outstanding. We have prepared a response to a draft permit for the North WWTP, and have submitted that to K Dow. There has been movement on K Dow’s end toward our interpretation of the “presumptive” approach used in our LTCP, and this is a very positive development. In the most recent correspondence, we have submitted a letter modifying our post-construction monitoring scheme.

Utility Locates – Kentucky 811

Reported to you last month that we were considering having our locates covered by a bid for these services that the City was issuing. We couldn’t work through all the details of how that would work, given time constraints and the complications of how our service territory overlays with HMG and HMPL. We also have some reservations about giving up control over this function. Bottom-line, the City is proceeding with a bid, and we may consider this further, after they have a period of working under an out-sourced arrangement and we can review how that works out for them.

Longer term, we may be looking at the need for more staff in this area. The volume of work increases yearly, since more emphasis has been placed on the liability that contractors and homeowners face if they disturb a utility without first calling in.

Habitat for Humanity of Henderson

In accordance with long-standing policy, we have waived tap fees for a house to be constructed by Habitat at 621 Fifth Street. The total fees waived are $2,195.

Policy Change

Attached you’ll find our Policy on **Fats, Oils and Grease Management**, which we are tweaking in response to comments about the design of the grease interceptors. We are trying to make this more flexible, to accommodate differing designs, and to minimize future maintenance hassles for operations that are required to have these units.

Small Project Construction Services

Back in May, you approved a pre-qualification of contractors for small projects. We have authorized four stormwater projects under this system.

- **Amberfield Court – Drainage Ditch work – $6,000 – Mark Bowling, Inc.**
- **Kimsey Lane – Twin 15” Culvert Replacement – with 24” – $11,960 - Hazex, Inc.**
- **Kimsey Lane – 36” Culvert Replacement – $13,805 – Mark Bowling, Inc.**
- **Kimsey Lane – 24” Culvert Replacement – $17,115 – Mark Bowling, Inc.**

You approved appropriation of $50,000 in BAR 2017-10, and this uses up $48,880 of that. We see this as a significant tool for managing our workload and getting critical small projects completed in a timely manner without tying up our workforce. The three contractors we prequalified have been prompt and enthusiastic in their responses.
We are asking for an additional $75,000 towards this effort in the new budget year, under the existing action report, and would need your approval by motion and passage, at this meeting.

**Strand Associates, Inc.**

We have had a general engineering services Master Agreement with Strand since 2011, and they did a lot of work for us on the LTCP prior to that. We’ve been happy with their work, and awarded two new engineering projects (S. Main Water Line and Green River Road Water Tank Rehab) to them last month. I have extended their Master Agreement for engineering services for another two years; no action required on your part, but I wanted to let you know.

**Strategic Plan**

Three months ago, we submitted an updated *Strategic Plan* that spells out our projects for the next 10 years. Looking forward, we now can set priorities for the projects that will be completed in the shorter term, over the next 2 to 3 years. Here’s a tentative *Three-Year Plan*:

### 2017 - 2018 Fiscal Year

- Paint and Rehab the College Tank $435,252 Construction
- South WWTP – Basin Renovation Project 2,200,000 Partial Funding
- US 41A & Old Madisonville Rd – Water Line Creek Crossings 100,000
- South Main Street Water Line – Drury to Yeaman 250,000 Partial Funding
- South Elm Street Water Line – Washington to Clay 125,000 Additional
- Small Project Construction Services 75,000 Additional
- Countryview Storm Sewer – Phase I - (Joint Project with City) 100,000

$3,085,252

### 2018 - 2019 Fiscal Year

- South WWTP – Basin Renovation Project 1,150,000 Completion
- South Main Street Water Line – Drury to Yeaman 250,000 Completion
- Paint and Rehab Green River Road Water Tank 300,000
- Myrene Drive Sewer Pump Station 700,000
- Water Line Replacement 150,000
- Small Project Construction Services 75,000 Additional
- Countryview Storm Sewer – Phase II 100,000

$2,725,000

### 2019 - 2020 Fiscal Year

- Paint and Rehab the Four-Star Tank – Interior Only 250,000
- South Water Treatment Plant – Clearwell (Project 3) 1,100,000
- Myrene Drive PS – Force Main Replacement 400,000
- Atkinson Park Sewer Pump Station 600,000
- Small Project Construction Services 100,000 Additional
- Countryview Storm Sewer – Phase III 100,000

$2,550,000
1.0 POLICY STATEMENT: The City Code of Ordinances contains the following sections:

Chapter 23-27 Use of public sewers
(e) Prohibited discharges into sanitary sewer and combined sewer. No user shall contribute or cause to be contributed, directly or indirectly, any pollutant or wastewater which will interfere with performance of the POTW. These general prohibitions apply to all such users of a POTW whether or not the user is subject to national categorical pretreatment standards or any other national, state, or local pretreatment standards or requirements. A user shall not contribute the following substances to the POTW:

(4) Solid or viscous substances in quantities or of such size capable of causing obstruction to the flow in sewers, or other interference with the proper operation of the wastewater facilities.

Chapter 23-98 Water and sewer charges
(a) Special rates:
(1) If the sewage, water or other liquid wastes being discharged into the sewers from any building or premises is determined by the city to contain unduly high concentrations of any substances which add to the operating cost of the sewer facilities of the city, the city may establish special rates or charges as to such class of building or premises, or the city may require the owner or other interested party to specially treat such sewage, water or other liquid wastes before it is discharged into the sewers.
(2) The city may establish rules and regulations regarding the use of the sewer facilities which may control the amount and characteristics of wastes permitted to be discharged therein where such quantities or characteristics may be injurious to the works or deleterious to their operation.

Environmental regulations and best practices require the Henderson Water Utility (HWU) to prevent sewer system blockages and obstruction in its sewer system caused by fats, oils and grease (FOG). Pollution discharge limits are specified in the City Code of Ordinances.

The management of an effective FOG program with commercial and industrial facilities, and food service establishments (FSEs), will help to prevent sewer system overflows and will reduce operational costs to HWU.

2.0 SCOPE AND IMPLEMENTATION

2.1 DEFINITIONS:

a) **HWU**: Henderson Water Utility, a division of the City of Henderson, Kentucky.

b) **Fats, Oils & Grease (FOG)**: Organic polar compounds derived from animal and/or plant sources. FOG may be referred to as "grease" or "greases" herein.

c) **Food Service Establishment (FSE)**: Any establishment, business or facility engaged in preparing, serving, packaging, or making food available for sale or consumption. Single family residences are not an FSE, however, multi-residential facilities may be considered a FSE at the discretion of HWU. Food Service Establishments will be classified as follows:
i. **Class 1:** Deli - engaged in the sale of cold-cut and micro-waved sandwiches/subs with no frying or grilling on site; Coffee Shops, Ice Cream shops and beverage bars as defined by NAICS 72213; Mobile Food Vendors as defined by NAICS 722330.

ii. **Class 2:** Limited-Service Restaurants (a.k.a. Fast Food Facilities) as defined by NAICS 722211; Caterers as defined by NAICS 722320.

iii. **Class 3:** Full Service Restaurants as defined by NAICS 722110

iv. **Class 4:** Buffet and Cafeteria Facilities as defined by NAICS 72212

v. **Class 5:** Institutions (Schools, Hospitals, Prisons, etc) as defined by NAICS 722310 but not to exclude self-run operations.

**d) Brown Grease:** Fats, oils and grease that is discharged to grease control equipment.

**e) Yellow Grease:** Fats, oils and grease that has not been in contact or contaminated from other sources (water, wastewater, solid waste, etc.) and can be recycled.

**f) Grease Control Equipment (GCE):** A device for separating and retaining wastewater FOG prior to wastewater exiting the FSE and entering HWU's wastewater collection system. GCE is constructed so as to separate and trap or hold fats, oils and grease substances. These devices include grease interceptors, grease traps, or other devices approved by HWU.

**g) Grease Interceptor:** Grease Control Equipment consisting of a large tank, usually 1,000 gallon to 2,000 gallon capacity, which provides FOG control for an FSE. Grease interceptors will be located outside the FSE, unless a variance request has been granted.

**h) Grease Trap:** Grease Control Equipment identified as an “under the sink” trap, a small container with baffles, or a floor trap. For an FSE approved to install a grease trap, the minimum size requirement is the equivalent of a 20-gallon per minute/40 pound capacity trap. All grease traps will have flow control restrictor and shall be vented.

**i) Grease Recycle Bin or Container:** Container used for the storage of yellow grease.

**j) North American Industry Classification System (NAICS):** A system developed by the U.S. Office of Management and Budget that is used to classify business establishments based on the type of industry or process at a facility. The website is found at [http://www.census.gov/epcd/www/naics.html](http://www.census.gov/epcd/www/naics.html).

**k) Series Interceptors:** Grease interceptor tanks installed one after another in a row and connected by a pipe.

**l) Tee (Influent & Effluent):** A tee-shaped pipe extending from the ground surface below grade into the grease interceptor to a depth allowing recovery (discharge) of the water layer located under the layer of FOG. Influent & Effluent tees are recommended to be made of schedule 40 PVC or equivalent material, and extend to within 12" to 15" of the bottom of the interceptor.

**m) Black Water:** Wastewater containing human waste, from sanitary fixtures such as toilets and urinals.

**n) Gray Water:** Refers to all other wastewater other than black water as defined in this section.
o) **General Manager:** The person appointed by the Water and Sewer Commission under section 23-43 of the City Code of Ordinances, to direct the employees of HWU. Where this policy refers to the General Manager, it may be understood to include a designated HWU employee to whom enforcement duties have been assigned.

2.2 **GENERAL REQUIREMENTS:**

a) All existing Food Service Establishments (FSEs) are required to have grease control equipment (GCE) installed, maintained and operating properly, in accordance with this FOG Management Policy.

b) All FSEs will be required to maintain records of cleaning and maintenance of GCE. GCE maintenance records include, at a minimum, the date of cleaning/maintenance, company or person conducting the cleaning/maintenance, volume (in gallons) of grease and wastewater removed, and final disposal location. A completed manifest from a grease waste hauler, that includes all the minimum information mentioned above, will meet this requirement.

c) GCE maintenance records must be available at the FSE premises so they can be provided to HWU or their representative, and/or the Health Department. The FSE shall maintain GCE maintenance records for three (3) years.

d) No FSE shall discharge oil and grease in concentrations that exceed the HWU limits for oil and grease.

e) Owners of Commercial Property may be held responsible for wastewater discharges from a leaseholder on their property. Enforcement action, billing, etc., will be to the person or entity in whose name the water/wastewater service is held.

f) Grease Control Equipment Certification Requirement: All establishments with grease control equipment must have their grease interceptor or grease trap inspected and certified annually by a HWU-certified grease waste hauler or plumber. If a grease interceptor or grease trap appears to be in good working order and condition and is appropriate in size, configuration, and ability to separate and retain wastewater FOG prior to wastewater exiting the FSE, then the grease control equipment will be deemed to have passed the certification requirement, and no further action is required until the next annual inspection. If a grease interceptor or grease trap is not in good working order or condition, or is not appropriate in size and configuration, or is otherwise not able to separate and retain wastewater FOG prior to wastewater exiting the FSE, then the grease control equipment will be deemed to have failed the certification requirement, and a corrective action response will be required from the FSE owner or authorized representative. Completed certification forms (Grease Interceptor Certification - Form A, or Grease Trap Certification - Form B) must be completed and signed by the grease waste hauler or plumber, as well as the FSE owner or authorized representative, and submitted to HWU. The original certification form must be submitted to:

HWU
Attn: FOG Program
230 North Alvasia Street
Henderson, Kentucky 42420
g) Failure of a Grease Interceptor or Grease Trap Certification: The FSE owner or authorized representative is responsible for including detailed "Corrective Action Response" information on the Grease Interceptor Certification form, or the Grease Trap Certification form that is submitted to HWU. If necessary, additional pages may be attached to the certification form. At a minimum, the "Corrective Action Response" information must include the reason for the failed certification, what corrective action will be taken to correct the problem, and the date the corrective action will be completed.

h) FSEs shall observe Best Management Practices (BMPs) for controlling the discharge of FOG from their facility. BMPs are listed in Attachment 1 to this policy.

i) FSEs shall dispose of yellow grease in an approved container or recycle container, and the contents shall not be discharged to any sanitary sewer line, storm water inlet, drain or conveyance. Yellow grease, or oils or grease, poured or discharged into the FSE sewer lines or HWU's sewer system is a violation of the HWU Sewer Use Ordinance City Code of Ordinances.

j) It shall be a violation to push or flush the non-water portion of the contents of GCE into the public sewer.

2.3 APPROVED GREASE WASTE HAULER LIST:

To ensure proper maintenance of grease control equipment and proper disposal of the FOG waste, HWU will maintain an "Approved Grease Waste Haulers List". Criteria for the grease waste hauler to be placed on the "Approved Grease Waste Haulers List" include, but are not limited to, the following:

- Signature of the grease waste hauler company's authorized representative and submittal to HWU of a completed "HWU Approved Grease Waste Hauler Agreement Form".
- The grease waste hauler agreement will include grease waste hauler reporting requirements to HWU, and making records available to HWU personnel, or their authorized representative. Failure to comply with any provision of the grease waste hauler agreement will result in removal of the grease waste hauler from the "Approved Grease Waste Haulers List", and/or enforcement action.
- Attendance at the HWU Grease Control Equipment Certification Class.
- HWU, at the discretion of the Water & Sewer Commission, may implement a FOG Treatment, Disposal and Resource Recovery Plan, in the form of a Request for Proposals (RFP) for the treatment and disposal of FOG waste generated from area food service establishments. The successful RFP respondent would provide some form of beneficial reuse of the FOG waste that is treated. Also, the RFP may include a cost estimate for maintenance (complete pump of grease interceptors and grease traps) and certification of the grease control equipment of all food service establishment grease interceptors and grease traps in the HWU service area. The results of the RFP may provide a single source for GCE pumping, GCE certification, FOG treatment, FOG disposal, and reporting to HWU. The total cost of the food service establishment GCE pumping, and FOG
treatment and disposal will be the same price or at a lower price than the average market cost of GCE Maintenance.

2.4 GREASE CONTROL EQUIPMENT INSTALLATION REQUIREMENTS:

a) **New Food Service Establishment or Upgrading of Existing Food Service Establishment:**
   Any new FSE, or upgrading of an existing FSE, shall require the installation of a grease interceptor.

   For purposes of this section, “Upgrading” of an existing FSE shall include cumulative increases in seating capacity of the FSE equal to or greater than 20 percent above the original seating capacity; significant changes to internal plumbing; or changes in Class as defined in section 2.1 (c) above.

   New or upgraded food service establishments shall submit a FOG plan to HWU for approval. The FOG plan shall include identification of all cooking and food preparation equipment (i.e. fryers, grills, woks, etc.); the number and size of dishwashers, sinks, floor drains, and other plumbing fixtures; type of FSE classification; type of food to be prepared, served, or packaged; and plans for the grease interceptor dimensions and location. HWU will review the FOG plan and grease interceptor sizing, recommend changes, and issue a permit in accordance with the approved plan.

   An FSE’s internal plumbing shall be constructed to separate sanitary wastewater flow (restroom/bath/shower) from kitchen process flow. Sanitary flow and kitchen process discharges shall be approved separately by HWU and shall discharge from the building separately. The kitchen process line(s) shall be plumbed to appropriately sized GCE. Kitchen process lines and sanitary lines may combine prior to entering the public sewer; however the lines cannot be combined until after the GCE.

b) **Existing Food Service Establishment:** All existing FSEs shall submit plans and install at the owner's expense a grease interceptor in accordance with the HWU FOG Management Policy, within ninety (90) days after notification by HWU, if and when HWU determines that a potential fats, oils and grease problem exists which is capable of causing interference, damage, or operational problems to structures or equipment in the HWU wastewater system. HWU shall retain the right to inspect and approve installation of the grease interceptor.

c) **Recommended Standards for New Multi-Unit Facilities:**

   1) New multi-unit facilities (strip malls or strip centers) should consider installing two separate sewer line connections for each unit within the multi-unit facility. One sewer line would be for sanitary wastewater and one sewer line for the kitchen area, or potential kitchen area, of each unit.

   2) The kitchen area, or potential kitchen area, sewer line should be connected to floor drains in the specified kitchen area, and connect, or be able to connect, to other food service establishment kitchen fixtures, such as 3-compartment sinks, 2-compartment sinks, or pre-rinse, mop and hand wash sinks. New multi-unit or "strip mall" facility owners should contact HWU prior to conducting private plumbing work at the multi-unit facility site. Multi-unit facility owners, or their designated contractor, should have plans for separate private wastewater lines for...
kitchen and sanitary wastewater for each unit. In addition, the plans should identify "stub-out" locations to accommodate a minimum 1,000 gallon grease interceptor for each unit of the multi-unit facility.

3) HWU may allow sharing of grease interceptors by FSEs, with HWU approval of the grease interceptor sizing.

4) New multi-unit facility owners should consider suitable physical property space and sewer gradient that will be conducive to the installation of an exterior, in-ground grease interceptor when determining the building location.

5) FSEs located in a new multi-unit facility shall have a minimum of a 1,000 gallon grease interceptor installed, unless that FSE is identified as a Class 1 facility. Class 1 FSE facilities are exempt from the requirements to install grease interceptors. Sanitary wastewater, or black water, shall not be connected to GCE.

d) Variance to Grease Interceptor Installation: At the discretion of the General Manager, some FSEs may receive a variance from the required installation of a grease interceptor.

e) Approval of Grease Control Equipment: All new FSEs and FSEs that have upgraded their facilities must contact HWU for final approval of the grease control equipment. This will include onsite inspection of the grease control equipment by HWU. Failure of the FSE to contact HWU to conduct the inspection of the new GCE will result in escalation of enforcement action.

f) Grease Control Equipment Sizing:

Unless otherwise stipulated by HWU, minimum acceptable size of grease control equipment for each FSE Classification will be as follows:

- **Class 1**: Deli, Ice Cream shops, Beverage Bars, Coffee Shops, Mobile Food Vendors - 25 gpm/50 pound Grease Trap
- **Class 2**: Limited-Service Restaurants / Caterers - 1,000 gallon Grease Interceptor
- **Class 3**: Full Service Restaurants - 1,000 gallon Grease Interceptor
- **Class 4**: Buffet and Cafeteria Facilities - 1,500 gallon Grease Interceptor
- **Class 5**: Institutions (School, Hospital, Jail/Prison, etc.) - 2,000 gallon Grease Interceptor, or two 1,000 gallon units installed in series

The grease control equipment minimum acceptable size for the above listed FSE classifications (Class 1 through 5) must be met. The FSE shall submit calculations based on code, industry standard or best practices, if different sizes are proposed. Sizing of the GCE is the sole responsibility of the FSE.

For discharges from a dishwasher, the GCE size shall be increased a minimum of thirty percent (30%) of the minimum sizing requirement, to prevent short-circuiting when the extremely hot water from a dishwasher is introduced to the GCE.

HWU will review GCE sizing information received from the completed Grease Control Inquiry Form or the FSE’s engineer, architect or contractor. HWU will make a decision to approve or require additional grease interceptor volume based on the type of FSE, the number of fixture units, and additional calculations.
Grease interceptor capacity should not exceed 2,000 gallons for each interceptor tank. In the event that the grease interceptor calculated capacity exceeds 2,000 gallons, the FSE shall install additional interceptors in series. Grease interceptors that are installed in series shall be installed in such a manner to ensure positive flow between the tanks at all times, i.e., tanks shall be installed so that the inlet invert of each successive tank shall be a minimum of 2 inches below the outlet invert of the preceding tank.

g) **Grease Control Equipment Specifications**: Grease Control Equipment must remove fats, oils, & grease at or below the HWU pollution discharge limit of 150 mg/L (City Code section 23-30). Failure to comply will require enforcement action in accordance with the Enforcement Response Plan.

h) **Grease Interceptor Design**

1) **Piping Design**

   a. The inlet and outlet piping shall have 2-way cleanout tees installed.

   b. The inlet piping shall enter the receiving chamber 2-1/2" above the invert of the outlet piping.

   c. On the inlet pipe, inside the receiving chamber, a sanitary tee of the same size pipe in the vertical position with the top unpluged shall be provided as a turndown. To provide air circulation and to prevent "air lock", a pipe nipple installed in the top tee shall extend to a minimum of 6" clearance from the interceptor ceiling, but not less than the inlet pipe diameter. A pipe installed in the bottom of the tee shall extend to a point 2/3 the depth of the tank. The inlet tee should be made of Schedule 40 PVC or equivalent material. See Figure 1.

   d. The outlet piping shall be no smaller than the inlet piping, but in no case smaller than 4" ID.

   e. The outlet piping shall extend to 12" above the floor of the interceptor and shall be made of a non-collapsible material. Minimum requirement for outlet piping is Schedule 40 PVC.

   f. The outlet piping shall contain a tee installed vertically with a section of pipe nipple installed in the top of the tee to extend to a minimum of 6" clearance from the interceptor ceiling, but not less than the pipe diameter, with the top open. Minimum requirement for the outlet tee is Schedule 40 PVC. See Figure 1.

   f-g. Inlet and outlet piping shall be accessible from outside the interceptor, via the access openings specified below.

2) **Baffles**

   a. The grease interceptor shall have a non-flexing (i.e. concrete, steel, etc.) baffle the full width of the interceptor, sealed to the walls and the floor, and extend from the floor to within 6" of the ceiling. The baffle shall have an inverted 90 degree sweep fitting at least equal in diameter size to the inlet piping, but in no case less than 6" ID. The bottom of the sweep shall be placed in the vertical position in the inlet compartment 12" above the floor. The sweep shall rise to
the horizontal portion, which shall extend through the baffle into the outlet compartment. The baffle wall shall be sealed to the sweep. See Figure 1.

b. The inlet compartment shall be 2/3 of the total liquid capacity with the outlet compartment at 1/3 liquid capacity of the interceptor.

3) Access Openings (Manholes)

a. Access to grease interceptors shall be provided by a minimum of one access opening per baffle chamber, of 24-inch minimum diameter, terminating 1 inch above finished grade with cast iron frame and cover. An 8" thick concrete pad extending a minimum of 12" beyond the outside dimension of the manhole frame shall be provided. One manhole shall be located above the inlet tee hatch and the other manhole shall be located above the outlet tee hatch. A minimum of 24" of clear opening above each manhole access shall be maintained to facilitate maintenance, cleaning, pumping, and inspections.

b. Access openings shall be mechanically sealed and gas tight to contain odors and bacteria and to exclude vermin and ground water.

c. Access openings shall be accessible for inspection by HWU.

4) Additional Requirements

a. Water Tight - Precast concrete grease interceptors shall be constructed to be watertight. A static water test shall be conducted by the installer with verification through visual inspection by HWU. The water test shall consist of plugging the outlet (and the inlet if necessary) and filling the tank(s) with water to the tank top a minimum of 24 hours before the inspection. The tank shall not lose water during this test period. Certification by the plumbing contractor shall be supplied to HWU prior to final approval of grease control equipment.

b. Location - Grease Interceptors shall be located so as to be readily accessible for cleaning, maintenance, and inspections. They should be located close to the fixture(s) discharging the wastestream. If possible, Grease Interceptors should not be installed in "drive-thru" lanes or a parking area. Grease Interceptor access openings shall never be paved over.

c. Construction Material - Grease Interceptors shall be constructed of sound durable materials, not subject to excessive corrosion or decay, and shall be water and gas tight. Each interceptor shall be structurally designed to withstand any anticipated load to be placed on the interceptor (i.e. vehicular traffic in parking or driving areas). Note: Concrete materials and other grease interceptor materials shall meet the standards of the American National Standards Institute, Inc. (ANSI) and the International Association of Plumbing and Mechanical Officials (IAPMO).

d. Marking and Identification - Prefabricated gravity grease interceptors shall be permanently and legibly marked in a location clearly and permanently visible with the following:

70
1. Manufacturer's name or trademark, or both
2. Model number
3. Capacity
4. Month and year of manufacture
5. Load limits and maximum recommended depth of earth cover in feet; and
6. Inlet and outlet
2.5 Grease Interceptor Cleaning/Maintenance Requirements

a) Grease Interceptor minimum size will be 1,000 gallon capacity, and maximum size will be 2,000 gallon capacity. If the FSE requires additional capacity, then grease interceptors shall be installed in series.

b) Partial pump of interceptor contents or on-site pump & treatment of interceptor contents will not be allowed due to reintroduction of fats, oils and grease to the interceptor, which is not allowed by the HWU Sewer Use Ordinance City Code of Ordinances, section 23-30(g) and the Code of Federal Regulations (CFR) § 403.5 (b) (8).

c) Grease interceptors shall be pumped in-full when the total accumulations of surface FOG (including floating solids) and settled solids reaches twenty-five percent (25%) of the grease interceptor's overall liquid depth. This criterion will be referred to as the "25% Rule". At no time shall the cleaning frequency exceed 90 days unless approved by HWU. Approval will be granted on a case by case basis, after submittal by the FSE documenting proof of proposed frequency. FSEs in Class 2 through 5 may require a pumping schedule of 30 days or 60 days to meet the 25% Rule.

d) The Grease interceptor effluent tee shall be inspected during cleaning and maintenance and the condition noted by the individual conducting the maintenance. Effluent tees that are loose, defective, or not attached shall be repaired or replaced immediately.

e) Grease Interceptors shall have access manholes over the influent tee and effluent tee for inspection and ease of cleaning/maintenance. Access manholes shall be provided for all separate compartments of interceptors for complete cleaning, i.e., interceptor with two main baffles (three compartments) shall have access manholes at each compartment.

f) Grease Interceptors shall be certified annually by a grease waste hauler or plumber. Grease Interceptor Certification (Form A) shall be completed and submitted to HWU annually. See General Requirements 2.2 (f) & (g) above.

2.6 Grease Trap Sizing, Installation, Cleaning, & Maintenance Requirements

a) All grease traps shall have flow control restrictor and shall be vented. Failure to provide flow restrictor and venting will be considered a violation.

b) All new FSEs that are allowed to install grease traps shall have HWU approval prior to starting operations.

c) Grease Trap minimum size requirement is a 20 gallon per minute / 40 pound capacity trap.

d) Grease Traps shall have the Plumbing Drainage Institute certification, and be installed as per manufacturer's specifications.
e) No automatic dishwasher shall be connected to an under-the-sink grease trap or floor grease trap. Dishwashers will cause hydraulic overload of the grease trap.

f) No automatic drip or additive feed systems are allowed prior to entering the grease trap.

g) A single grease trap device shall be installed for each significant kitchen fixture unit (i.e. each 3-compartment sink). HWU must approve the number of grease traps and connections to the grease trap.

h) During cleaning of the grease trap, the flow restrictor shall be checked to ensure it is attached and operational.

i) Grease Traps shall be cleaned of all fats, oils, and grease and food solids at a minimum of once every two (2) weeks. If the FOG and food-solids content of the grease trap is greater than 25%, then the grease trap must be cleaned every week, or as frequently as needed to prevent 25% of capacity being taken up by FOG and food solids.

j) Grease Trap waste should be sealed or placed in a container to prevent leachate from leaking, and then disposed, or hauled offsite by a grease waste hauler or plumber to an approved disposal location.

k) Grease Trap waste should not be mixed with yellow grease in the grease recycle container.

l) Grease Traps must be "certified" annually. See General Requirements 2.2 (f) & (g) above.

2.7 Accidental Discharge-Safeguards:

FSEs shall provide such facilities and institute such procedures as are reasonably necessary to prevent or minimize the potential for accidental discharge of fats, oils, and grease into the sewage collection system. This includes implementation of "Best Management Practices" protocols.

2.8 'Additives' Prohibition for use as Grease Management and Control

a) Additives include but are not limited to products that contain solvents, emulsifiers, surfactants, caustics, acids, enzymes and bacteria.

b) This FOG management policy prohibits the use of enzymes, hot water, emulsifiers or other additives to cause oil or grease to pass through the user's grease trap or grease interceptor designed to remove oil and grease.

c) Additive use will not be a substitute for regular, required cleaning or pumping of grease control equipment.

2.9 Right of Entry - Inspection and Monitoring

HWU, or an authorized representative, shall have the right to enter the premises of FSEs to determine whether the FSE is complying with the requirements of this policy and/or the City Code of OrdinancesHenderson Sewer Use Ordinance. FSEs shall allow HWU personnel or an authorized representative full access to all parts of the premises for inspection, monitoring, and/or records examination. Unreasonable
delays in allowing HWU personnel access to the FSE premises shall be a violation of this policy and the Henderson Sewer Use Ordinance, City Code of Ordinances.

HWU may require that the FSE install monitoring or additional pretreatment equipment deemed necessary for compliance with this policy and/or the City Code of Ordinances, Henderson Sewer Use Ordinance.

2.10 Fee Schedule:

HWU may charge inspection, monitoring, assessment, impact, and permit fees to the FSE to defray costs of implementation of the FOG program costs. The fee schedule is included in Attachment 2.

2.11 Enforcement Action

Enforcement action will follow procedures outlined in the “HWU Enforcement Response Plan for Sewer Use and MS4”, as adopted by the Water and Sewer Commission and the City of Henderson Board of Commissioners, and/or the enforcement response outlined in Attachment 3.

a) Initiation of Enforcement Action: Enforcement Action may be initiated against the FSE for, among other things, failure to clean or pump grease control equipment, failure to maintain grease control equipment including annual inspections and installation of properly functioning effluent-T and baffles, failure to install grease control equipment, failure to control FOG discharge from the FSE, and use of additives so that FOG is diluted and pushed downstream of the FSE.

b) Fats, Oils and Grease blockage in downstream manhole from FSE: If FSE inspections and field investigations determine that a fats, oils and grease interference or blockage in the POTW is caused by a particular food service establishment, then that food service establishment shall reimburse HWU for all labor, equipment, supplies and disposal costs incurred by HWU to clean the interference or blockage. The charges will be added to the FSEs water/wastewater bill. Failure to reimburse HWU may result in termination of water service.

c) FSE failure to maintain GCE after Notification or NOV due date: If a FSE fails to pump, clean or maintain their GCE after a Notice of Violation due date, HWU may pump/clean the GCE to prevent additional FOG problems downstream. The FSE will be charged for the cost of pumping and maintaining the GCE, including HWU personnel costs. Mechanical failure of the GCE will be considered a violation of this FOG Management Policy and the City Code of Ordinances, Henderson Sewer Use Ordinance.

d) Significant Noncompliance of Wastewater Discharge Limits: U.S. EPA has defined "significant noncompliance" as violations that meet one or more of the following criteria:

1) Chronic violations of wastewater discharge limits, defined as those in which sixty-six (66%) percent or more of all of the measurements taken during a six-month period exceed (by any magnitude) the daily maximum limit or the average limit for the same pollutant parameter;

2) Technical Review criteria (TRC) violations, defined here as those in which thirty-three (33%) percent or more of all of the measurements for each pollutant

74
parameter taken during a six-month period equal or exceed the product of the daily average maximum limit, or the average limit multiplied by the applicable TRC (TRC = 1.4 for BOD, TSS, fats, oil, and grease, and 1.2 for all other pollutants except pH). The following compatible pollutants are exempt from TRC consideration if they exceed the surcharge level but do not exceed upper ceiling: BOD, TSS, FOG;

3) Any other violations of a pretreatment effluent limit (daily maximum or longer-term average) that HWU determines has caused, alone or in combination with other discharges, interference or pass-through (including endangered the health of HWU personnel or the general public);

4) Any discharge of a pollutant that has caused imminent endangerment to human health welfare or to the environment or has resulted in HWU’s exercise of its emergency authority to halt or prevent such a discharge;

5) Failure to meet a compliance schedule milestone contained in a local control mechanism or enforcement order for starting construction, completing construction, and attaining final compliance;

6) Failure to provide, within 30 days after the due date, required reports, such as baseline monitoring reports, 90-day compliance reports, periodic self-monitoring reports, and reports on compliance schedules;

7) Failure to accurately report noncompliance;

8) Any other violation or group of violations that HWU determines will adversely affect the operation or implementation of the local pretreatment program. Generally, an isolated instance of noncompliance or a Category 0 violation can be met with an informal response or a Noncompliance Notification (NCN). Any Category 1 to Category 4 violations should be responded to with an enforceable order that requires a return to compliance by a specific deadline.

e) Noncompliance Notification (NCN): Generally issued by the HWU inspector/contractor field personnel, the Noncompliance Notification (NCN) is an official communication from HWU to the non-compliant user and/or owner of the premises that informs the user of a pretreatment violation. The NCN is issued for any problems identified with the grease control equipment operation, maintenance, or components. Also, an NCN will be issued when FOG is identified in the downstream sewer lines from a food service establishment. A normal response time or due date to respond to HWU is 30 days, but the NCN may have shorter response times, depending on the severity of the violation. Failure to respond by the designated due date on a NCN, will result in the issuance of a Notice of Violation, or additional escalation in enforcement action.

f) Notice of Violation (NOV): Generally issued by the Industrial Pretreatment Coordinator or FOG Program Manager, the Notice of Violation (NOV) notifies the non-compliant user and/or owner of violations of Henderson’s Sewer Use Ordinance the City Code of Ordinances. Within five (5) days of the receipt date of the NOV, an explanation of the violation and a plan for the satisfactory correction and prevention thereof, to include specific required actions, shall be submitted to HWU. Submission of this plan in no way relieves the user and/or owner of liability for any violations occurring before or after
receipt of the notice of violation. A NOV does not contain assessment of penalties or
cost recovery. The NOV provides the user and/or owner with an opportunity to correct
the noncompliance on its own initiative rather than according to a schedule of actions
determined by HWU. The NOV documents the initial attempts of HWU to resolve the
violation. Authenticated copies of NOVs may serve as evidence in judicial proceedings.

g) **Compliance Order:** When the HWU General Manager finds that a user and/or owner has
violated or continues to violate the HWU FOG Management Policy, a permit, or an
order issued thereunder, the General Manager may issue a compliance order to the user
and/or owner responsible for the discharge directing that, following a specified time
period, water and wastewater services shall be discontinued unless adequate treatment
facilities, devices, or other related appurtenances have been installed and are properly
operated. Compliance Orders may also contain such other requirements as might be
reasonably necessary and appropriate to address the noncompliance, including the
installation of pretreatment technology, additional self-monitoring, and management
practices. The Compliance Order may include a requirement to provide a Schedule of
Compliance.

h) **Schedule of Compliance:** A Schedule of Compliance is a detailed list of the steps to be
taken by a non-compliant user and/or owner whereby compliance with all pretreatment
regulations will be achieved. This schedule shall contain increments of progress in the
form of dates for the commencement and completion of major events leading to the
construction and operation of additional pretreatment required for the User to meet
the applicable Pretreatment Standards (e.g. hiring an engineer, completing preliminary
plans, executing contracts for components, commencing construction, etc.).

i) **Cease And Desist Order:** When the HWU General Manager finds that a user and/or
owner has violated or continues to violate the City Code of Ordinances, HWU Sewer Use
Ordinance or this FOG Policy or any permit or order issued hereunder, the General
Manager may issue an order to cease and desist all such violations and direct those
persons in noncompliance to:

1) Comply forthwith
2) Take such appropriate remedial or preventive actions as may be needed to
   properly address a continuing or threatened violation, including halting
   operations and terminating the discharge.

j) **Emergency Suspensions:**

1) HWU or the General Manager may suspend the wastewater treatment service
   and/or wastewater permit of a food service establishment, commercial or
   industrial user whenever such suspension is necessary in order to stop an actual
   or threatened discharge presenting or causing an imminent or substantial
   endangerment to the health or welfare of persons, the WWTP, or the
   environment.

2) Any user and/or owner notified of a suspension of the wastewater treatment
   service and/or the wastewater permit shall immediately stop or eliminate its
   contribution. In the event of a user’s and/or owner’s failure to immediately
   comply voluntarily with the suspension order, the control authority shall take
such steps as deemed necessary, including immediate severance of the sewer
connection, to prevent or minimize damage to the WWTP, its receiving stream,
or endangerment to any individuals. HWU or the General Manager shall allow
the user and/or owner to recommence its discharge when the endangerment
has passed, unless the termination proceedings set forth in Termination of
Permit are initiated against the user and/or owner.

Penalty Assessment: Determining a penalty amount that reflects the violation's significance
is extremely important. If the penalty is too small, its deterrent value is lost and the user
and/or owner may regard the amount as a tax or nominal charge to pollute. If the penalty is
too great, it could bankrupt the user and/or owner (making necessary investment in
pretreatment equipment impossible or potentially forcing unnecessary closure). HWU has
categorized the various types of violations, and assigned a penalty range to each category as
shown in the following table. Penalty categories are determined by using the Enforcement
Response Table included in Attachment 3. All penalty assessments shall be approved and
signed by the General Manager or his designee. Penalty amounts are considered to be an
economic deterrent to the illegal activity. Penalty ranges have been designed to recover any
economic benefit gained by the violator through non-compliance, and are in addition to,
and not in lieu of, other expenses and charges authorized herein. All penalties are assigned
at the discretion of HWU.

Within each Category of violation, an initial citation will lead to a fine at or near the low end
of the amount range. Repeated violations shall lead to increasing penalty amounts. Other
factors to be considered are willful disregard of the regulations, failure to respond or take
remedial action under a Noncompliance Notification (NC) or Notice of Violation (NOV), and
repeated patterns of behavior within a reckoning period assigned in an NCN or NOV.

<table>
<thead>
<tr>
<th>Category</th>
<th>Amount</th>
</tr>
</thead>
<tbody>
<tr>
<td>0</td>
<td>NO PENALTY</td>
</tr>
<tr>
<td>1</td>
<td>$10.00 to $250.00</td>
</tr>
<tr>
<td>2</td>
<td>$100.00 to $1,000.00</td>
</tr>
<tr>
<td>3</td>
<td>$500.00 to $10,000.00</td>
</tr>
<tr>
<td>4</td>
<td>DIRECT LEGAL ACTION</td>
</tr>
</tbody>
</table>

Note: For Category 4, any penalties and/or costs to be assessed at the maximum
penalty allowable by applicable law and included as part of the legal action.

Assessments for damages or destruction of the facilities of the WWTP, and any
penalties, costs, and attorney's fees incurred by HWU as the result of the illegal activity,
as well as the expenses involved in enforcement, are not part of this penalty assessment
procedure.

3.0 RESPONSIBILITY: The HWU Environmental Compliance and Pretreatment Coordinator shall
be responsible for the overall coordination for this process, under the direction of the Director
of Plant Operations.

Exceptions to this policy must be approved by the General Manager.
APPROVED:

_________________________ Date: 2.15.16

Tom Williams, P.E.
General Manager
BUSINESS

- Action Report #2017-20 – South Elm Street Water Main Replacement
- Action Report #2017-21 – Sludge Disposal
- Action Report #2017-23 – South WWTP – Extended Aeration Basins Improvement Project
- Consent to Annexation of Property on Borax Drive, Parcel #46-65, #46-58, #46-64 & #46-55
Henderson Water Utility
Action Report # 2017 - 20

To: Henderson Water & Sewer Commission
From: Tom Williams, P.E., General Manager
Subject: South Elm Street Water Main Replacement
Project No: 22-1802-0069
Date: 17 July 2017

Background:

- This Action Report supplements and replaces Action report 2016-31, which included the first several blocks of this project and was approved on 21 November 2016.

- Some areas of Henderson are served by water mains that are nearly 100 years old. We are making a more concerted effort to replace these mains as funds are available, to insure system reliability, improve pressure and flow, and reduce risk.

- When the Vine Street Tank was out of service, the South Elm Street area from Dixon to Jefferson had low pressure and “rusty” water. Investigation revealed that the 4”, 5” and 6” cast iron lines in that area were severely tuberculated. We cleaned one section of line on S. Elm from Audubon to Jefferson with a reaming device, but the line from Jefferson to Clay was replaced because it could not be cleaned.

- We also attempted to clean the line on Jefferson Street from Main to Elm, but finally opted to replace it with a new 2” line, installed inside the old line.

- Repairs to streets, curbs and sidewalks exceeded our initial estimates. It is difficult to estimate costs on a project like this, but the two blocks we replaced this year averaged about $ 50,000 per block.

- We now are ready to proceed with replacement of the two blocks on S. Elm, from Clay to Washington. At Washington, we will connect to a 20” line that was laid on the Downtown project. Portions of this line will be installed in the verge, reducing pavement costs. Additionally, we will be laying a new 2” line on Dixon St from Green to Elm, and retiring a very old 4” line on Green Street, from Jefferson to Norris Lane.

Budget/Financial Considerations:

<table>
<thead>
<tr>
<th>South Elm Street Water Main Replacement Project</th>
</tr>
</thead>
<tbody>
<tr>
<td>Spending to Date – through 6.30.2017</td>
</tr>
<tr>
<td>Estimated cost for S. Elm – Washington to Clay</td>
</tr>
<tr>
<td>Revised Total Estimate of Costs</td>
</tr>
<tr>
<td>Less Previously Approved</td>
</tr>
<tr>
<td>Additional Amount Needed for Completion</td>
</tr>
</tbody>
</table>

Legal Considerations:

- Procurements necessary for the completion of this project have and will follow the Kentucky Model Procurement Code.

Recommendations & Approvals:

- Staff recommends additional appropriation in an amount of $ 147,225 from the “Unidentified Capital Projects” line item in the 2017-2018 Budget, to fund work already completed, plus the final two blocks.
• Board approval authorizes all work necessary to complete the scope of work for this project, including issuance of any additional bids, purchase orders, engineering services, change orders, easement acquisition, or other authorizations required to complete the work without unnecessary delays.

Respectfully Submitted for Approval:

[Signature]

Tom Williams, P.E.
General Manager

BOARD ACTION – 17 July 2017

PASSED:_______ FAILED:_______ TABLED:_______ DATE:_______
Henderson Water Utility
Action Report # 2017 - 21

To: Henderson Water & Sewer Commission
From: Kathy Ambrose, CPPO, CPPB Purchasing Manager
Subject: Sludge Disposal
Date: 17 July 2017

Background:

- The most recent contract for sludge hauling became effective on 18 August 2014 (Action Report 2014-34). It included two, one-year renewals, which we exercised.
- Sludge hauling was most recently awarded to Hazex, Inc., of Henderson, in September 2016 (Action Report 2016-24), and we have been pleased with the service provided. It is coming up for renewal or rebid in September.
- With the expiration of the second, one-year renewal on disposal and impending renewal on hauling, timing was good to revisit the market, so we issued a bid specification for disposal that’s very like the last time we bid this. This is in keeping with our policy of rebidding these continuing contracts on at most a three-year schedule, to make sure we are doing our due diligence and getting fair market pricing.
- One major change is that we have added the dry-bed sludge to this bid, as our previous vendor who handled that for us has gone out of business.
- Bids were received on 12 July 2017, with responses from only one landfill company, Advanced Disposal, our current vendor.
- The bid submitted was for $16.79 per ton, for sludge from both wastewater plants, and the same unit price for Dry Bed Waste. Estimated tonnages are 18,000 tons at the North WWTP, 6,500 tons at the South WWTP, and approximately 1,680 tons of dry bed waste.

Policy/Budget/Legal Considerations:

- It is HWU’s established policy to take the bid(s) evaluated to be in the best interest of the Utility based upon the specifications set out in the bid document.
- Current pricing is $15.99, making this bid 5% higher. Based on the estimated yearly tonnages at each plant, this will lead to increased costs of $20,944 annually from what’s currently budgeted.
- This procurement is in accordance with the Model Procurement Code (KRS 45A.365).

Recommendation:

- Staff recommends awarding the bids for Sludge Disposal to Advanced Disposal.
- Since disposal locations have not changed from the previous bid, we intend to renew the hauling contract when it comes up for renewal in September. This will be subject to mutually agreeable pricing revisions as specified in the original bid for that service, and we will report on that renewal in an action report in August/September.
- The 2017-2018 Operating Budget contains sufficient funds to cover these costs.
• Board approval authorizes the General Manager to initiate all purchase orders, contracts, or other authorizations required to complete the purchase of these necessary services without unnecessary delays.

Respectfully Submitted:

Kathy Ambrose, CPPO, CPPB
Purchasing Manager

Approved for Submittal:

Tom Williams, P.E.
General Manager

Commission Action – 17 July 2017

PASSED: ___________  FAILED: ___________  TABLED: ___________
Henderson Water Utility
Action Report 2017 - 22

To: Henderson Water & Sewer Commission
From: Kevin Roberts, Director of Plant Operations
Subject: Trihalomethane Rapid Response Analyzer (THM-RR)
Date: 17 July 2017

Background:

- This supplements Action report 2016-03, approved on 25 January 2016, which included purchase of TOC Analyzers and discussion of possibly obtaining a Gas Chromatograph.
- To protect our drinking water from disease-causing organisms, or pathogens, we add a disinfectant (bleach). Disinfection is complicated because certain microbial pathogens, such as Cryptosporidium, are highly resistant to traditional disinfection practices. Also, disinfectants themselves can react with naturally-occurring materials in the water to form byproducts, which may pose health risks.
- A major challenge for water suppliers is how to balance this need to control and limit the health risks to the population from pathogens, while meeting requirements to limit the formation of disinfection byproducts (DBPs).
- The Microbial and Disinfection Byproducts Rules (MDBPs), are a set of interrelated regulations that address risks from microbial pathogens and disinfectants/disinfection byproducts.
- The Stage 2 DBP rule focuses on limiting exposure to DBPs, specifically total trihalomethanes (TTHM) and the total of five haloacetic acids (HAAs), which can form in water from the disinfectants used to control microbial pathogens. We test for DBPs at points in our system where problems are likely to occur, which is generally at the far reaches of our system, or in areas where dead-end lines or low use might lead to longer water age, a primary indicator of DBP formation. This testing is performed quarterly, with results reported to KDOW. Levels of DBP above the limits must be reported publicly.
- Currently, our DBP testing is performed by an outside lab, and results are generally available 30 days after the testing is performed, making it difficult to manage chemical use and DBP formation. We’re always chasing a moving target, so management must take the form of adherence to broad ranges of operating parameters. As these regulations have tightened, this procedure is less than optimal.
- Over the past 3 months, we have been using a unit to measure Trihalomethanes on a demo trial basis. This unit provides TTHM results on any given sample in 30 minutes. It can also be used as an inline unit, providing data that can be trended. This provides us the ability to experiment and “tweak” operations and processes to mitigate TTHMs in the distribution system.
- The potential purchase of this unit was mentioned in the March 2017 GM Report, with an anticipated 2 to 3 year payback from reduced amounts of Powdered Activated Carbon, which the trial demo was to better define. That was overly optimistic, the payback from reduced PAC will not be as quick as hoped, but the data that has been collected is valuable.
- To have a contractual lab run a TTHM test for us costs approximately $75 and results are 3-4 weeks out. With this unit, we have performed more than 2000 tests for THMs and are not waiting on any results. This would cost us $150,000 through a contract lab and the data would be largely unusable for real-time adjustments.

New Developments:

- To demo this unit for 3 months cost us $10,500, with half of this to be applied towards the purchase of a unit.
- There have been discussions about purchasing a Gas Chromatograph (see Action Report 2016 – 03). This would allow us to perform similar testing, but these are highly technical pieces of equipment.
that require nearly full-time attention by lab personnel, and we don’t have the staff for that. Additionally, they are very expensive to maintain and service. On the plus side, a GC instrument would greatly expand our ability to test. Weighing all the pros and cons, we are not recommending a GC unit.

- The THM-RR unit is a scaled down and operator-friendly Gas Chromatograph with a service requirement that is only a fraction of the cost. We have only found one unit that fits our needs.
- Under KRS 45A.380, we may award the purchase of commodities, services, or equipment through noncompetitive negotiations from a sole source when justification is provided.
- The cost of this unit and associated items including service is broken down as follows:

<table>
<thead>
<tr>
<th>Item</th>
<th>Total Cost</th>
</tr>
</thead>
<tbody>
<tr>
<td>THM-RR</td>
<td>49,990.00</td>
</tr>
<tr>
<td>Auto Calibration &amp; Sampler</td>
<td>5,999.00</td>
</tr>
<tr>
<td>Intro Discount on Sampler</td>
<td>(900.00)</td>
</tr>
<tr>
<td>Demo Credit</td>
<td>(5,250.00)</td>
</tr>
<tr>
<td>Service Agreement</td>
<td>5,000.00</td>
</tr>
<tr>
<td>2% Contingency</td>
<td>1,161.00</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td><strong>$ 56,000.00</strong></td>
</tr>
</tbody>
</table>

Legal & Financial Considerations:

- All procurements for this equipment have and will follow the Kentucky Model Procurement Code.

Recommendations & Approvals:

- Staff recommends using $ 56,000 from the FY 2017-2018 Capital Budget for this project.
- We may bring purchase/lease/annual maintenance of a unit that will test for HAA5s to the Board at a future date.
- Board approval authorizes the General Manager to initiate all work necessary to complete this acquisition, including issuance of any bids, purchase orders, engineering services, task orders, change orders, or other authorizations required.

Respectfully Submitted:

Kevin Roberts
Director of Plant Operations

Approved for Submittal:

Tom Williams, P.E
General Manager

Commission Action – 17 July 2017

PASSED:_________  FAILED:_________  TABLED:_________
Henderson Water Utility
Action Report # 2017 - 23

To: Henderson Water & Sewer Commission
From: Tom Williams, P.E., General Manager
Subject: South WWTP – Extended Aeration Basins Improvement Project
Date: 17 July 2017

Project Background:

- **This report supplements and replaces Action report 2017-09, which authorized design of this project and was approved on 17 April 2017.**
- The South Wastewater Treatment Plant (SWWTP) was constructed in two phases. A 4.0 million gallon per day (MGD) plant was constructed in 1997 to serve the Tyson Foods (then Hudson) processing plant. It also served the City of Sebree, the Tyson Hatchery in McLean County, and other users nearby. It was expanded in 2001 to a capacity of 8.0 MGD, when Tyson increased the size of their plant. Tyson paid for the improvements through a special charge on their bill.
- Both the original plant and the expansion utilized lined lagoons in a process known as extended aeration. The original two lagoons had volumes of 3.6 million gallons, and in the expansion, four additional lagoons of comparable size were constructed, bringing the total aeration basin volume to 21.6 MG. Each lagoon has a surface area of about 1 acre, and a nominal depth of 16 feet.
- The lagoons employ plastic liners, floating air lines, and “drop” diffusers, which are designed to move from side to side, providing mixing and bubble aeration, which helps to sustain the biological digestion process which is called “activated sludge”. In a nutshell, wastewater is introduced into the lagoons, and the aeration process maintains an aerobic bacterial culture in suspension. After a time, this mixture passes into a tank (clarifier) where the remnants of the cells are separated from clean water. A portion of the cells are returned to the lagoons to maintain the proper balance of dead cells as food for new bacteria in the wastewater being treated. The waste is our sludge.
- We have a history of problems with the lagoons at both wastewater plants. Every summer, we go through a lengthy process with our maintenance staff to repair air lines, replace parts, etc. There were successive failures of liners in Basins 1 & 2 at the NWWTP in 2009. At that time, we determined a different course of action on repair of Basin 1, inventing a robust design with a thicker liner, a concrete basin floor, fine-bubble aeration equipment that was fixed in place, and a gas collection layer under the liner. Maintenance is nearly non-existent, and the system performs better, as the fine-bubble aerators provide better mixing and oxygen transfer in the mixed liquor. J.R. Wauford was our consultant on this work, and we have been extremely pleased with the results of that project.
- Currently, we are utilizing three of the newer basins at the South WWTP (#s 3, 5 & 6), and there is evidence of liner/slope failure on all three of those basins.
- We have not had much success at repairing an existing liner, or in moving aeration equipment from one basin to another, except as a partial, stop-gap measure. With limited funds available, we hesitated to rush into a project whose costs might escalate drastically, and still leave us with problematic basins and sub-optimal options for enhancing treatment.
- We asked J.R. Wauford to study our opportunities, and they presented three alternatives; we chose a variation of the NWWTP project, installing a concrete bottom, fixed fine-bubble diffusers, and a better liner system in three of the existing basins (#s 4, 5 & 6).
- A major difference between this location and the NWWTP Basin 1 project is the presence of groundwater at the South WWTP site. Design of this project considered this, and led to a more extensive underdrain system than was used on the Basin 1 project, to reduce the risk of floating a slab.
• We anticipate staging this project by constructing one basin at a time, which will allow us to keep the plant in operation but will stretch the construction out over two seasons.
• We will still have 3 un-used basins that might be used to provide additional capacity in the future.

Current Developments:
• Bids were received on 14 July, and are tabulated here, along with our budget analysis of the project:

<table>
<thead>
<tr>
<th>South WWTP – Extended Aeration Basins Improvement Project</th>
</tr>
</thead>
<tbody>
<tr>
<td>M. Bowling, Inc., Henderson</td>
</tr>
<tr>
<td>Deig Bros. Lumber and Construction Co., Inc., Evansville</td>
</tr>
<tr>
<td>Rivertown, Inc., Newburgh</td>
</tr>
<tr>
<td>Bidding, Geotech, Construction Engineering and Inspection Services (Estimate)</td>
</tr>
<tr>
<td>Spending To Date (Preliminary Engineering, Design, Geotech) thru 6.30.17</td>
</tr>
<tr>
<td><strong>Total (Low Bid, Engineering, Spending to Date) plus 5% Contingency</strong></td>
</tr>
<tr>
<td>Less Previously Approved Appropriation</td>
</tr>
<tr>
<td><strong>Additional Appropriation Required</strong></td>
</tr>
</tbody>
</table>

Budget/Financial/Legal Considerations:
• Funds for construction will be appropriated from the FY 2017-18 Capital budget for that portion we believe will be paid in this fiscal year, with an additional appropriation for the remainder of the total project costs from next fiscal years’ budget.
• Procurements necessary for the completion of this purchase have and will follow the Kentucky Model Procurement Code.

Recommendations & Approvals:
• Staff recommends that the Commission authorize award of this project to M. Bowling, Inc., Henderson, in the amount of $3,182,150.
• Appropriation of $2,200,000 of these costs will be from the “Unallocated Capital Funds” budget line for this fiscal year, with the remainder to be set aside in next years’ capital budget.
• Board approval authorizes the General Manager to initiate all work necessary to complete this project, including issuance of any bids, purchase orders, engineering services, change orders, or other authorizations required to complete the work without unnecessary delays.

Respectfully Submitted for Approval:

[Signature]

Tom Williams, P.E.
General Manager

BOARD ACTION – 17 July 2017

PASSED:_______ FAILED:_______ TABLED:_______ DATE:_______
Henderson Water Utility
Action Report # 2017 - 24

To: Henderson Water & Sewer Commission
From: Tom Williams, P.E., General Manager
Subject: Canoe Creek Water Line Crossing – US 41A
Project No.: 22-1802-0078
Date: 17 July 2017

Project Background:

- We have two water mains that cross Canoe Creek and feed the Courtyard/US 41A area; they are both 10” lines. The 41A creek crossing had a major leak just outside the creek limits, last year, which we repaired. We’ve been closely monitoring the condition of these lines.
- During the recent dry period, we discovered that the US 41A crossing has been undercut by the creek channel. This line has locking joints, which may be the only thing holding it together. We declared an emergency and have not had to go through a protracted bidding process.
- We attempted to obtain three quotes for this work, and that information is presented here:

<table>
<thead>
<tr>
<th>Company</th>
<th>Quote</th>
</tr>
</thead>
<tbody>
<tr>
<td>A &amp; S Services</td>
<td>$42,978.40</td>
</tr>
<tr>
<td>BMB, Inc.</td>
<td>Contacted – Did Not Quote</td>
</tr>
<tr>
<td>Brown Service Co.</td>
<td>49,380.76</td>
</tr>
</tbody>
</table>
- The work included in the bids is for boring a pipe under the creek. We will be making the connections on either end, pressure testing and disinfecting the line, which we estimate to cost approximately $20,000.

Budget/Financial/Legal Considerations:

- There are no easement or design costs for this project, and any additional materials will be acquired in accordance with our purchasing policy.
- Total costs for this project are estimated at $65,125, which includes a contingency on the bid from A & S. Funds will be set aside from “Unidentified Capital Projects” in the capital budget.
- Procurements necessary for the completion of this project have and will follow the Kentucky Model Procurement Code.

Recommendations & Approvals:

- Board approval authorizes all work necessary to complete the scope of work for this project, including issuance of any additional bids, purchase orders, engineering services, change orders, easement acquisition, or other authorizations required to complete the work without unnecessary delays.

Respectfully Submitted for Approval:

[Signature]

Tom Williams, P.E.
General Manager

BOARD ACTION – 17 July 2017

PASSED:_______ FAILED:_______ TABLED:_______ DATE:_______
EXECUTIVE SESSION

- To discuss matter regarding future acquisition of real property, in that publicity would likely affect the value of the property, pursuant to KRS 61.810 (1) (b)