



COUNCIL WORK SESSION

Wednesday, November 18, 2020 at 1:00 PM

COUNCIL MEMBERS:

Mayor Rick Scholl
Council President Doug Morten
Councilor Keith Locke
Councilor Ginny Carlson
Councilor Stephen R. Topaz

LOCATION & CONTACT:

<https://zoom.us/j/99203535533?pwd=NEdpWExrempQaWE3VE1BTnhoeEtpdz09>
Website | www.sthelensoregon.gov
Email | kathy@ci.st-helens.or.us
Phone | 503-397-6272
Fax | 503-397-4016

AGENDA

CALL WORK SESSION TO ORDER

VISITOR COMMENTS - *Limited to five (5) minutes per speaker*

DISCUSSION TOPICS

1. Employee Length of Service Award
2. Discussion regarding Broadband - *Matt & Strategic Network Group*
3. Discussion Regarding Urban Trail Map - *Councilor Morten*
4. Strategic Action Plan Updates
5. City Administrator Report

OTHER BUSINESS

6. **FYI** - Public Works Department Report for October

ADJOURNMENT

EXECUTIVE SESSION

Following the conclusion of the Council Work Session, an Executive Session is scheduled to take place to discuss:

- *Real Property Transactions, under ORS 192.660(2)(e); and*
- *Consult with Counsel/Potential Litigation, under ORS 192.660(2)(h).*

Representatives of the news media, staff and other persons as approved, shall be allowed to attend the Executive Session. All other members of the audience are asked to leave the Council Chambers.

FOR YOUR INFORMATION*Upcoming Dates to Remember:*

- November 18, 1:00 p.m., Council Work Session, Zoom
- November 18, 7:00 p.m., Council Regular Session, Zoom
- November 26 & 27, Thanksgiving Holiday Observed, All City Offices Closed

Future Public Hearing(s)/Forum(s):

- None at this time.

VIRTUAL MEETING DETAILS

Join Zoom Meeting:

<https://zoom.us/j/99203535533?pwd=NEdpWExrempQaWE3VE1BTnhoeEtpdz09>

Meeting ID: 992 0353 5533

Passcode: 654333

Dial by your location: 1 346 248 7799

The St. Helens City Council Chambers are handicapped accessible. If you wish to participate or attend the meeting and need special accommodation, please contact City Hall at 503-397-6272 in advance of the meeting.

Be a part of the vision...Get involved with your City...Volunteer for a City of St. Helens Board or Commission!

For more information or for an application, stop by City Hall or call 503-366-8217.

LENGTH OF SERVICE AWARD PROGRAM



To: Mayor and City Council

From: Kathy Payne, City Recorder

Date: November 18, 2020

I am happy to announce that we have one employee who has reached a milestone in his employment with the City of St. Helens. The following individual will receive a certificate and pin at the November 18 Council work session.

5 Years

Dustin King began working for the City in February of 2007 as a Patrol Officer. He resigned in 2010. He was rehired in November of 2015, and has worked his way up, serving as a Detective from April of 2018 to just recently when he was promoted to Corporal. This gives Dustin five (5) years of continuous service to the citizens of St. Helens.

Congratulations, Dustin, and **thank you** for your service!



ELECTED ESSENTIALS WORKSHOPS

New to city government? Need a refresher on government fundamentals?

Plan now to attend one of six FREE virtual trainings.

Topics covered include:

- Council Responsibilities
- Ethics
- Public Meetings
- Public Records
- Legal Powers & Impediments Affecting Elected Officials

The workshops will include live Q&A time with speakers following each topic.

There will be six virtual Elected Essential Trainings this year. We have allocated two regions to each date to help spread out the number of attendees at each training. If that date assigned to your region does not work in your schedule, please feel free to sign up for the date that works best for you. The map of LOC Regions can be found on the [LOC website](http://www.loc.org).

Workshop Dates:

December 1 – Regions 1 & 5
 December 2 – Regions 6 & 7
 December 3 – Regions 3 & 4


December 11 – Regions 2 & 8
 December 14 – Regions 9 & 10
 December 15 – Regions 11 & 12

All workshops are 8:30 a.m. - 3:30 p.m.

REGISTER NOW! – www.orcities.org

For questions, please contact the LOC at loc@orcities.org or (503) 588-6550.

PUBLIC WORKS MEMO

To:	The Mayor and Members of City Council	
From:	Sue Nelson, Interim Public Works Director	
Date:	18 November 2020	
Subject:	October Public Works Department Activity Summary	

Engineering

1. Held pre-construction meeting for N. Vernonia sidewalk project; started tree removal.
2. Completed the RFQ for consulting services for the S. 1st & Strand Street & Utility Extension project.
3. Held pre-construction meeting for S. 14th Street Storm Drain Improvement project.
4. Working with six play equipment providers on designs and proposals for the new playground equipment for McCormick Park, made partially possible by the Blazers Moda Assist Grant.
5. See complete report.

Parks

In addition to cleaning restrooms daily, general parks maintenance, and collecting garbage:

1. Assisted with various tasks related to Halloweentown and the haunted house.
2. Winterized sprinkler systems; moved some tables for winter storage.
3. A considerable amount of time was spent removing leaves from playgrounds & park areas.
4. Removed illegal campers from McCormick Park.
5. See complete report.

Public Works Operations & Maintenance

1. Video inspected sanitary sewer mains in entire Emerald Meadow Subdivision for 2 year warranty.
2. Performed maintenance on gravel driveway/roadway that accesses Orgrowtech.
3. Installed new bench, kiosk, and bike rack at the trail entrance to Dalton Lake Nature Preserve.
4. Started the office remodel/reconfiguration on second floor at City Hall.
5. Serviced and/or made repairs on 48 vehicles and/or equipment.
6. Responded to five after-hours call outs.
7. See complete reports.

Water Filtration Facility

1. Produced 38.5 million gallons of filtered drinking water, an average of 1.24 million gal/day.
2. SCADA 1 experienced hard drive failure and loss of data needed for regulatory reporting. Worked with MorePower to reconstruct necessary information over several days.
3. See complete report.

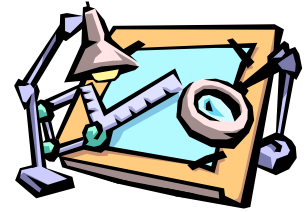
Waste Water Treatment Plant

1. 1-year performance report on Energy Smart electrical savings showed 13.6% reduction in costs. See attached report
2. Resolved several issues that occurred at PS#1.
3. Worked with Berry (formerly Letica) to resolve sampling violations.
4. Compiled and provided information to Keller for Sanitary Sewer master plan update.
5. See complete report.



Engineering Department Status Report

4 November 2020



Most of the restrictions implemented in March by the City, County, and State due to the COVID-19 pandemic continue to remain in place. Although contractors and Public Works employees continue to work, various safety precautions have been instigated including social distancing, restricting the number of people in a vehicle, increased frequency of hand washing, mandatory hand sanitizer in vehicles, also have soap and clean water available on job sites if possible or required if hand sanitizer is not available. Private contractors and City employees are required to follow these rules.

In addition to the above requirements, the staff at the City Shops remain working a staggered schedule to reduce the number of people that are in the building before each shift and during breaks and lunch. This makes it possible for them to maintain social distancing protocols. City Hall offices are closed to the public and available by appointment only. The WWTP staff is working an altered schedule to reduce the amount of time that they would be in close proximity to each other since they are working within a lab and/or office environment more frequently than the Operations staff at the Shops and at the Parks Department.

DEVELOPMENT PROJECTS

Greystone Estates Subdivision

The Developer has submitted the as-built drawings and the City has prepared the required bond agreements. We are waiting for these to be signed and returned to the City for final acceptance of the subdivision. The Plat is scheduled to be approved at the November 4 Council Session.

St. Helens Place Apartment Project

The Project Engineer has inquired about scheduling a walk-thru for final acceptance of the public infrastructure. All required public improvements have been completed.

Brayden Street Storage Building

Work continues on the construction of the public improvements. This includes street and sidewalk construction on Matzen and Brayden Streets, water main extension, and storm drain improvements. This work is being done congruently with the public improvements for the Grocery Outlet project.

Hanna's Place Development

We have received the Maintenance Bond from the Developer. The Final Plat is on the Council Agenda to be signed at the November 4 Council Session.

Control Solutions Development at McNulty & Industrial Way

No change in status: Work is continuing on the storm drain and frontage improvements for this new light industrial development at the corner of McNulty and Industrial Way.

Grocery Outlet at Violette's Villa Property

Construction is proceeding on the public utility and street improvements associated with the new Grocery Outlet across from the new Legacy Health building. The work is being done congruently with the public improvements for the Brayden Street Storage Building.

St. Helens Industrial Business Park Development

Continuing to work on various aspects of the Industrial Business Park master plan. The completed master plan will be instrumental in providing utilities and access to multiple potential industrial sites within the Business Park.

STREET AND TRANSPORTATION PROJECTS

N. Vernonia Road Sidewalk Project

Removal of trees along the project route is scheduled for November 4-6. A preconstruction meeting with the Contractor, Emery & Sons, was held on October 26 and they are anticipating starting to move equipment and materials to the site the week of November 23 and start work November 30, and tentatively finishing in March 2021. They have several months to complete the project, which takes into account construction during the fall and winter weather and helps to keep project costs down.

Columbia Boulevard Sidewalk Safe Routes to School Grant Project

This project is still in the design phase. The project includes new sidewalk on Columbia Boulevard that will connect the new sidewalk at Gable Road with the existing sidewalks on Sykes Road. Additional crosswalk safety improvements will be included in the design.

ADA Ramp Project

Project documents are at 90% complete for a project that will repair and/or install 8 new ADA compliant sidewalk ramps at various locations along higher classification streets. This project is close expected to go out to bid by the first of the year with construction expected to occur in the spring/summer of 2021.

Riverwalk and Waterfront Property Road Extension

Requests for Qualifications for complete design and permitting services was recently advertised for two separate but related projects: 1, the Riverwalk, construction plans and specifications for the waterfront boardwalk and pathway starting at Columbia View Park and extending the length of the waterfront property. 2, S. 1st Street and Strand Street Extensions, construction plans and specifications for the street and utility extension through the waterfront property. These projects have different scopes and goals but will require coordination of design to ensure there is great connectivity between the facilities.

WATER SYSTEM PROJECTS

2MG Reservoir Rehabilitation Project

Working through the attorney to schedule the required repairs.

Water Filtration Facility Computer and SCADA Upgrade

A draft Request for Proposals has been prepared for review by the Water Filtration Facility Supervisor. It is anticipated that the project will go out for proposals/bids by November 6 with an anticipated submittal date of December 8, 2020.

Sykes Road Property Investigation

After review of the site, elevations, existing infrastructure, potential piping routes, this site has been determined to be unsuitable for a future reservoir.

Water Filtration Operator Position

Received applications for two potentially qualified applications. Neither one accepted an invitation for an interview. Continuing to advertise and actively recruit.

SANITARY SEWER AND STORM DRAIN SYSTEM PROJECTS

Sanitary Sewer and Storm Drain Master Plan Project

The next project meeting with the Consultant, Keller and Associates, is scheduled for November 18. We will learn the progress of the hydraulic models and work on filling in data gaps. This will be a multi-month project that will help to guide the improvement and expansion of the City's sanitary and storm systems.

Columbia Boulevard Sanitary Sewer Extension

A pre-construction meeting for the project has been held with the Owner, Engineer, Contractor, and City staff. The tentative start date has been pushed back until mid-November. The Contractor is anticipating closing the road between Gable and Sykes while the work is being done. A Columbia County Right-of-Way permit will be required.

S. 14th Street Backyard Storm Extension

A pre-construction meeting was held with the Contractor, TFT Construction, Inc., on November 4. The work is scheduled for the week of November 16 and is expected to take 3 to 5 days to complete. The contract requires the work to be completed by November 25.

MISCELLANEOUS PROJECTS AND ACTIVITIES

Campbell Park Sports Court Grant Project

Once again, no bids were received for this project during the second bidding period. The City's attorney has set out a procedure to move forward that includes documenting the two bidding processes, and then they will prepare an exemption statement that will have to be advertised and approved by the City Council that will allow the City to directly seek bids from qualified contractors. More to come.

Blazers Moda Assist Program

With the expanded budget, thanks to the additional funds received from the Blazers Moda Assist Program, we have met with multiple equipment representatives and we are in the process of receiving designs and proposals from these play equipment providers. These will be evaluated by a sub-committee from the Parks & Trails Commission and staff, and the high score(s) will be presented to the Commission at their next scheduled meeting. The Commission had decided earlier in the year to cancel the November meeting so this will defer to the December 14th scheduled meeting. The goal is to make a recommendation to the City Council on a preferred equipment provider and playground design.

Right-of-Way and Construction Permits

There were 4 right-of-way and/or construction permits issued in October: One to PGE; one to NW Natural; one for sidewalk repairs next to Safeway; and one to Fatbeam, a new communications franchise for a portion of a project to improve internet service for the School District.

Miscellaneous Projects

Management staff continues to discuss and revise the COVID-19 protocols as necessary, which continue to evolve. There has been a lot of coordinating with various departments to ensure the safety and well-being of all of our employees and the public to the best of our capabilities.

Met with representatives from the School District to start coordination efforts for the improvements at the High School.

Ensure that Tina and the PW Operations staff have the various Halloweentown decorations and events coordinated.

Training Workshops and Committee Meetings

Participated in the Parks Commission meeting on October 12.

Participated in the monthly Columbia County Traffic Safety Commission.

Continue to work with the Building and Planning Departments to improve the permitting process.

Engineering Staff attended the Oregon APWA Virtual Fall Conference.



Parks Department for October 2020

Daily duties were performed which include: cleaning and restocking restrooms, garbage pickup, mowing, and general parks maintenance.

****Reminder that the Parks Staff is currently down one position that has not been filled, and we have just been given authorization to hire temporary summer helpers. Additionally, the community service workers are not able to assist due to COVID-19 restrictions. There is likely a noticeable reduction of overall parks maintenance due to the lack of staffing.****

Worked on the Haunted House

Assisted with Halloweentown

Turned off remaining sprinkler systems

Rescued a picnic table from the riverbank

Hauled off debris from Halloweentown

Met with several playground enders for McCormick Park

Moved tables from Campbell Park to McCormick Park for winter storage

Removed leaves from Campbell Park (several times)

Sprayed weeds in the flower beds at S. 18th and OPR

Cleaned the gutters and swept off the roof at the Parks Shop

Treated the parks shop roof for moss

Repaired a broken picnic table

Swept off the bike path to Columbia City

Blew the leaves off the playgrounds (several times)

Assembled the memorial bench for the off-leash area of McCormick Park

Repaired a mower

Removed graffiti from Campbell Park restrooms

Took scrap metal to Public Works to be recycled

Framed and poured a concrete slab for the dog park memorial bench

Removed illegal campers from McCormick Park

Blew leaves off the Veterans Memorial Plaza at McCormick Park

Repaired the privacy wall at the McCormick Park restrooms

Pressure washed the dance floor at Columbia View Park

Removed the pieces of gazebo railing from its roof

Cleaned up Columbia View Park for the concert

Public Works Work Report

October 2020

Item #6.

Water Dept:

Read meters and heavy users
Installed 14 new radio read meters and replaced 20
Flagged or storm project on S. 18th St.
Helped TV sewer at Emerald Meadows
Helped with upstairs remodel demo at City Hall
Covered dirt pile with plastic at industrial park
Helped dig out storm line & install catch basin at N. 4th St & Wyeth St.
Helped in stall bollards at Senior Center
Hauled rock for roads at Salmonberry
Hauled sand to shop for stockpile & to Halloweentown
Replaced shut-off at 356 N. 2nd St.
Cut sidewalk at Klondike to make ramp for garbage can
Cleaned dump site at WWTP
Filled potholes and rocked road by marijuana place
Replaced shut-off at 324 N. 3rd St.
Cleaned up brush and limbs from highway strip by D.I. Rd.
Ran a data log at 165 N. 19th St.

Sewer Dept:

Worked on S. 18th storm project
TVed Emerald Meadows
Cleaned manholes
Took deer to tree farm
Did warranty inspection on Weigandt property behind Les Schwab
Worked on catch basin at Richardson's
Worked on N. 4th St.
Put rock on road at Salmonberry
Helped with upstairs remodel demo at City Hall
Helped with forms and concrete at Dalton Lake
Sewer plug at 245 S. 12th St. – on owner's side
Vacuumed out three pump stations
Cleaned and installed new shelving in sewer shed
Verify storm on Columbia Blvd.
Wire located sewer on S. 14th for TFT
Cleaned up brush and limbs from highway strip by D.I. Rd.

Building Maintenance/Other

Put roof coating on #2 well
Worked on upstairs remodel at City Hall
Covered dirt pile with plastic at industrial park
Worked on street signs
Halloweentown
Put up fence covering
Put bench together
Worked on door at Senior Center
Worked at Rec Center
Hauled junk to Transfer Station
Worked on light at #2 well
Fixed window in Utility Billing
Put moss control on roofs at Senior Center and Library

Installed bollards at Senior Center
Formed and poured concrete at Dalton Lake
Built shelves in sewer shed

Item #6.

Call-Outs

Dead deer at S. 13th St. & OPR
Tree down in road at S. 6th St. & OPR
Water leak at 2415 Columbia Blvd – on owner's side
Tree down on bike path
No water at 356 N. 2nd St. – owner broke shut-off

Miscellaneous:

Swept streets
Marked 88 locates
Checked wells & reservoirs daily

October 1st to 31st 2020Oct. 1st

Brett Vacation

Oct. 2

Brett vacation

Oct. 5th

PW Checked the asphalt cutter made sure it would start

PW #49 Checked the hydraulic oil level

PW #14 Took the truck to Emmert for warranty work

Oct. 6th

PW Took the asphalt cutter back to the shop

PW Checked the equipment

Oct. 7th

PW #49 Went to Public works to see how the asphalt cutter works

Shop Cleaned up the old welder so it can go over to parks loaded into a truck

Oct. 8th

PW Swept streets

PW #49 Replaced the blade

PW Jump started a pick up

PW Helped put up a screen at public works

Oct 9th

PW Swept streets

Keith Sick

Oct. 12th

Shop Took the gate apart and fabricated new pieces for it and put it all back together

Parks #23 looked at the mower out on the highway and moved the linkage that holds the mower deck in place back to where it is supposed to be, checked the bolts and connection points found nothing wrong or why it moved

PW Sharpened a chain saw

PW Put out cones on Columbia BLVD

Oct 13th

Shop Clean up

PW #34 Had new glass installed in the excavator

PW #34 Started the grader moved it around hadn't been run in a long time checked all fluids

Oct 14th

Office Computer work Filled paper work

PW #34 Checked the glass that was installed

PW #5 Checked for a hydraulic problem found that the joystick control switch is bad

Parks Made up a new hydraulic hose for the broom on the tool cat

Oct 15th

PW #41 Full service
 PW #55 Removed and replaced the right rear tire
 PW #30 Checked the brakes

Oct. 16th

PW Swept Streets
 Brett Gone 2hrs early
 Shop Cleaned out the dunk tank

Oct 19th

PW #4 Jump started the truck and ran it for a while
 PW #85 Looked at the flat tire that had been slashed on the taxi cab at Halloween town
 Shop Cleaned the tire dunk tank and filled with water
 PW #34 Removed the tape from the new windows

Oct. 20th

PW #85 Installed a tire on the taxi
 PW #16 removed and installed 600 feet of gator hose on the rear of the flusher

Oct 21st

PW #4 Started the truck, checked fluids, tightened the belts
 PW #13 Jump started the truck, cleaned the left front hub adjusted the tire chains
 PW #32 Checked fluids, tadjusted the tire chains and ran the truck for a while

Oct 22

PW Swept Streets
 Parks Checked on the equipment

Oct 23rd

PW Swept Streets
 PW #17 Full service

Oct 26th

Brett Sick day
 PW #21 Removed the block heater cord

Oct 27th

PW #55 Checked for a electrical fault shut the truck off and reset it, everything seems to be fine.
 Replaced the left side gutter brooms
 PW #21 Replaced the block heater cord and tested it
 PW #13 Replaced two batteries

Oct 28th

Shop Cleaned the lathe and oiled it
 PW Checked on the equipment since it was all there and it hasn't moved for a few days.

Oct 29th

PW Moved three trailers from Public Works to the building at Boise

PW #20 Repaired a hydraulic leak

Parks #25 Repaired a license plate light

PW Repaired the Pole saw

PW #22 Jump started the old Mack

Oct 30th

PW Swept Streets

PW #40 Vehicle broke down on the highway brought it back to the shop for repairs



City of St. Helens, Oregon
 Public Works
 Water Filtration Facility
 PW# 4109734
 265 Strand Street
 St. Helens, OR 97151
 PH: (503) 397-1311 FAX: (503) 397-3351
Water Filtration Facility Journal
October 2020



Water Production: 38.5 million gallons, which averages 1.24 million gallons per day

Week 1 Produced and sent September's OHA reports to the on fire extinguishers. Sent sewer readings to Columbia City to keep batteries full, (fork lift, hi-lift, riding mower).

State. Performed monthly check public works. Charging all units

Week 2 Howard on call, Chlorine delivery, Cl-17 reagents to find chlorine piping route, mowed grass

replaced, Curt and Ryan potholed

Week 3 Tim refreshed brine tank for water softener, Tim unwound the grinder pump in lift station, mowed grass, SCADA 1 hard drive failure, created 8 hour strip charts for crisis preparation of monthly operations reports

Week 4 Chlorine delivery, hard drive replacement SCADA 1, deriving data from the 19th to the 26th for month end reports.

Respectfully submitted Guy Davis

WWTP Monthly Operations and Maintenance Report

October 2020

To: Sue Nelson

From: Aaron Kunders

Secondary System Report

- 10/1-Sampler fridge returned from Polar Refrigeration.
- 10/3-Aerator #13 tripped. Reset and running.
- 10/14-Replaced Zahn board on SolarBee H. Also cleaned dishes on the others.
- 10/14-Greased aerators on Substations 1 and 4.
- 10/20-Sampler fridge won't keep cold. Unplugged and deiced the unit and called Polar Refrigeration. They hadn't set the auto defrost. Should work now.
- 10/20-Greased remaining aerators on substations 2 and 3.
- 10/22-Lowered SolarBee draw tubes on H and I.

Primary System Report

- 10/25-Lowered run time on SCADA for all aerators.
- 10/27-Replaced anchor cable on aerator #5. Greased all aerators.

Pump Stations

- 10/6-Toured lift stations with Keller and Associates for the WWMP.
- 10/9-PS#1-Pump #1 doesn't run in auto. Will run in hand. Will call Peak Elec. to check. Peak here to troubleshoot on the 12th.
- 10/10-PS#4-Low Mission battery. Replaced.
- 10/16-PS#1-Peak Elec. out to replace HOA switch. It wasn't the problem. While there, the HydroRanger was not working correctly.
- 10/19-PS#1-Call into tech support for HydroRanger. Factory reset unit and ran other tests and found the unit is no good. Ran lift station on the floats until a new one can be installed.
- 10/20-PS#1-Peak Elec. back to wire in new high-level float directly to Mission so we can use floats without the alarms.
- 10/21-Cleaned wetwells at PS#1,3,5, and 11. Got #2 and 4 on the 22nd.
- 10/29-PS#5-Emergency generator hookup training. All present.
- 10/29-PS#1-Peak Elec here to install new HydroRanger. They also drilled new hole to wetwell for wiring.

Sodium Hypochlorite System

- 2473 gallons used this month.
- 10/16-Hypo delivery. 4900 gallons
- 10/21-Public works here to move metal plate off pad for new hypo tank.

Call-outs

- 10/29-2000-PS#1 high level alarm. Stewart in. New HydroRanger not working correctly and the level got high enough to trip alarm float and turn pumps on. Went back to floats overnight and will reprogram later.

Plant

- 10/6-Grouted cracks in concrete around buildings.
- 10/15-pH probe bulb broke. Unable to get new one calibrated. Used portable.
- 10/15-Cleaned South contact tank.
- 10/26-Got \$7500 rebate check from CRPUD for energy savings through the ESIP cohort.

Pretreatment

- 10/1-Set up BOD retest for ORPET. Will deliver samples on the 2nd.
- 10/5-Wrote up inspection report and compliance schedule for ORPET.
- 10/16-Issued Notice of Violation to Letica for failure to sample.
- 10/22-Set up sampler at Letica for split sampling event. Will collect on the 23rd and deliver to ALS in Kelso.
- 10/27-Inspection of Berry, formerly Letica.

Other

- 10/8-Quarterly testing and CuBLM testing on river. Delivered samples to PDX-BES.
- 10/12-14-Bioassay testing.
- 10/27-Sent out DMRQA testing report to DEQ.

Next Month

- Install new hypo storage tank
- Eat a big, fat turkey

Energy Smart Industrial

Strategic Energy Management Completion Report

Reporting Period Year 1

Presented to:



City of St. Helens Wastewater Treatment Plant
451 Plymouth St
St. Helens, OR 97051

Sponsored by:



and



9/2/2020

OFFICIAL USE ONLY

Disclaimer

The intent of this Strategic Energy Management (SEM) Completion Report is to provide a final analysis of the actual energy savings and implementation costs associated with the SEM reporting year. Appropriate detail is included in this report.

The City of St. Helens shall independently evaluate the results of any recommendations provided in this report. In no event will Columbia River PUD and/or Bonneville Power Administration's (BPA) Energy Smart Industrial (ESI) program be liable for the failure of the customer to achieve a specified amount of energy savings, the operation of customer's facilities, or any incidental or consequential damages of any kind in connection with this report or the implementation of recommended measures.

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1.0 EXECUTIVE SUMMARY

This report outlines the documented energy savings associated with the first year of the Strategic Energy Management (SEM) effort at City of St. Helens Wastewater Treatment Plant in St. Helens, OR. SEM was offered by Columbia River PUD as part of the Bonneville Power Administration's (BPA) Energy Smart Industrial (ESI) program. This report details the results obtained in the first reporting period (Year 1).

Table 1. Project Milestones

Project Phase	Start Date	End Date
Baseline Period	11/30/2018	5/26/2019
Year 1 Reporting Period	6/30/2019	6/30/2020
Year 2 Reporting Period	7/1/2020	6/30/2021

St. Helens has a long history of energy conservation and has implemented many projects over the years. Starting in 2010, Solar Bee aerators were installed in the main lagoon. Other projects have occurred over time, including replacement of pumps and resizing equipment as needed.

St. Helens had an Energy Scan on 6/4/2019. Since that time, they have achieved significant savings in the first performance year, as shown in Table 2, which summarizes St. Helens wastewater treatment plant (WWTP) performance during the SEM engagement. Details as to how these values have been calculated are provided in Section 3.

Table 2. Overall Performance

Description	Year 1
Gross Energy Savings	277,329 kWh
Net Energy Savings	277,329 kWh
Percent Energy Savings	13.6%
Incentive	\$7,561.09
Avoided Energy Cost	\$13,866.43
Total SEM Financial Benefit	\$21,427.52

2.0 SUMMARY OF ENERGY MANAGEMENT GOALS AND ACHIEVEMENTS

2.1 ENERGY MANAGEMENT OBJECTIVES

The St. Helens WWTP embraced the spirit of SEM at the onset of Year 1. They set an energy savings goal of 5% for Year 1. Aaron and Stewart initiated high impact projects prior to the initial energy scan to start saving energy quickly.

2.2 ENERGY TEAM ACHIEVEMENTS

The core energy team is shown in Table 3. Aaron and Stewart were highly involved and the primary contributors toward completing projects. Though dedicated energy team meetings did not occur, Kevin and Stewart worked together to complete projects. Key reported year accomplishments are summarized in Table 4.

Table 3. Energy Team

Name	Site Role	SEM Role
Sue Nelson	Public Works Director	Executive Sponsor
Aaron Kunders	Wastewater Treatment Superintendent	Energy Champion & Data Master
Stewart Hartley	Lead Operator	Team Member

Table 4. Summary of Energy Efficiency Measures

Measure Description	Measure Category				Date Complete
	Operations	Maintenance	Capital	Awareness	
Primary aerator adjustment: reduce aerator run hours and reduce the number of aerators that turn on when low DO is seen.	X				05/31/2019
TSS oven timer: installed timer so oven only runs when needed; about 19 hrs/day savings.	X				06/07/2019
Unplug generator block heaters during warm months	X				06/05/2019
Flash mixer on contact tank: set to run only when both contact tanks are in use instead of continuously	X				06/10/2019
Seasonal adjustments - heat tape, primary aerator heaters, adjust headworks start level, unplug generator block heaters in warm weather	X				07/01/2019
Lab lighting – install occupancy sensor	X				07/02/2019
Install bathroom light and fan timer	X				07/02/2019
Install LED lighting in hypo pump room	X				07/02/2019
Headworks screen level adjustment	X				05/31/2019
Old Hauler bench light	X				06/05/2019
Entryway light alternative	X				07/02/2019
Secondary aerator run time adjustment	X				06/06/2019
Reprogram building thermostat	X				06/06/2019
Records room heater	X				06/05/2019
Secondary Building cooling/heating	X				01/31/2020
E. coli incubator timer	X				06/07/2019

2.3 KEY CHALLENGES

The plant may be taken offline in four years, which makes it hard to justify large capital expenditures. For example, adding more instantaneous dissolved oxygen (DO) probes was discussed but ultimately dismissed. Currently, secondary DO going to the river is measured once per day. If they close the lagoon, they could use real-time DO.

3.0 CALCULATION OF ENERGY SAVINGS AND PERFORMANCE INCENTIVE

3.1 ENERGY MODEL SPECIFICATION

The six-month period from December 2018 through May 2019 was used to establish the energy model for the SEM project. All electric energy savings are calculated relative to this baseline period. This statistical model provides a mean model that predicts a consistent level of energy use. This model was used because no statistically based models provided sufficient performance to meet ESI standards.

The model equation is:

$$\text{Predicted Energy Use} \left(\frac{kWh}{day} \right) = 5,539.5716$$

Further details of model developments are located in the *Energy Model Report* version 1 dated 10/10/2019.

3.2 REVIEW OF DATA

Process and energy data were reviewed for the reporting period. No issues in the data were identified.

3.3 ADJUSTMENTS FOR CONCURRENT INCENTIVIZED PROJECTS

No utility incentivized projects occurred during the reporting period.

3.4 PROGRAM SAVINGS AND PERFORMANCE INCENTIVE

Program savings is reported in Table 5 below. Additional CUSUM and time series graphs in Appendix A also show the savings over time.

Table 5. Summary of SEM Savings and Financial Benefit

Description		Year 1
Period Start:		6/30/2019
Period End:		6/30/2020
① Predicted Energy		2,033,023 kWh
② Non-Routine Adjustments		0 kWh
③ Actual Energy		1,755,694 kWh
④ Gross Energy Savings (① + ② - ③)		277,329 kWh
⑤ Incentivized Projects		0 kWh
⑥ Net Savings (④ - ⑤)		277,329 kWh
⑦ Percent Savings (⑥ ÷ ①) × 100		13.6%
⑧ Busbar Adjusted Savings (⑥ × 1.09056)		302,443 kWh
⑨ Incentive (\$0.025 /kWh × ⑧)		\$7,561.09
⑩ SEM-Related Electrical Energy Cost Savings (rate × ⑥)		\$13,866.43
⑪ Total SEM Financial Benefit (⑨ + ⑩)		\$21,427.52

4.0 PERFORMANCE TRACKING SYSTEM

4.1 PERFORMANCE TRACKING SYSTEM (PTS) OVERVIEW

As part of Wastewater Efficiency Coaching (WEC), St. Helens uses a cloud-based Energy Management Information System (EMIS) known as SENSEI, to track energy use and performance. SENSEI stores energy and production data and tracks opportunities found during the SEM engagement. When opportunities are completed, the energy team updates the tracking tool. This process often reveals important relationships between completed opportunities and energy performance. Figure 1 shows monthly consumption since January 2019. Additional screenshots from SENSEI are provided in Appendix C.

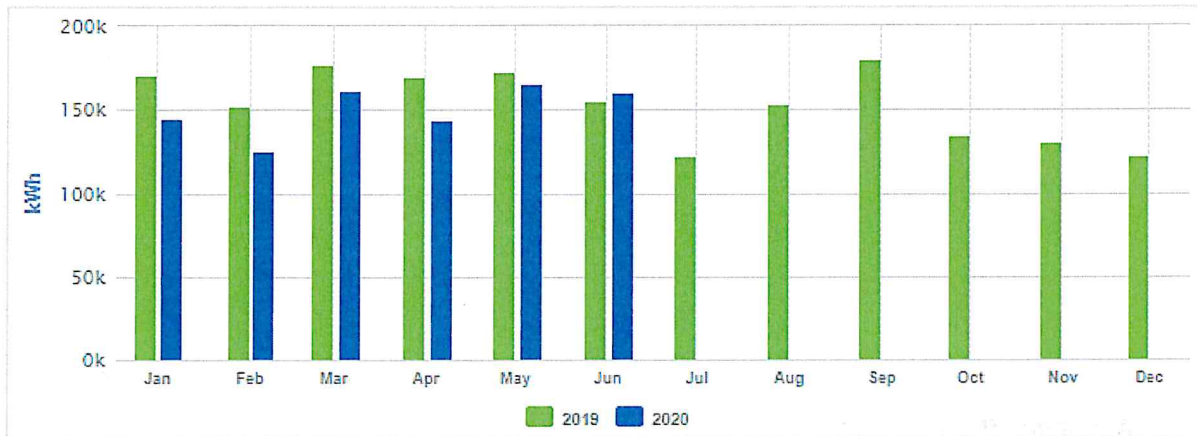


Figure 1. Year-over-year comparison of monthly energy use.

4.2 PTS MAINTENANCE CO-FUNDING REQUEST

St. Helens did not incur any PTS maintenance expenses in Year 1. Therefore, no PTS co-funding will be requested.

5.0 ACTION ITEM REPORTED COSTS

St. Helens did not report costs for any action items in Year 1.

6.0 NEXT STEPS

6.1 PLANS FOR CONTINUOUS IMPROVEMENT

SEM includes two annual reporting periods, which provide St. Helens an opportunity to continue to develop and refine internal management systems related to electrical energy and implement longer term opportunities. St. Helens is encouraged to maintain the Energy Champion and energy team functions, and to actively plan, prioritize, and communicate energy-related activities. Following Year 1, St. Helens energy team has the following upcoming projects:

O&M

- On hold, pending COVID-19 resolution.

Capital

- Security lighting upgrade
- Solar panel installation on roof

6.2 UPCOMING SEM SAVINGS REPORTING AND INCENTIVE

St. Helens agrees to submit at a minimum, annual data for the annual Completion Report. They are encouraged to meet this requirement by providing monthly production data and action item progress updates. Upon submittal of the required data, ESI will develop the Completion Report which documents annual verified savings. After Columbia River PUD and ESI have approved the report, they will process an incentive payment in the amount of \$0.025/kWh multiplied by the verified savings or as per the agreement signed by St. Helens and Columbia River PUD.

APPENDIX A. ENERGY PERFORMANCE TRACKING

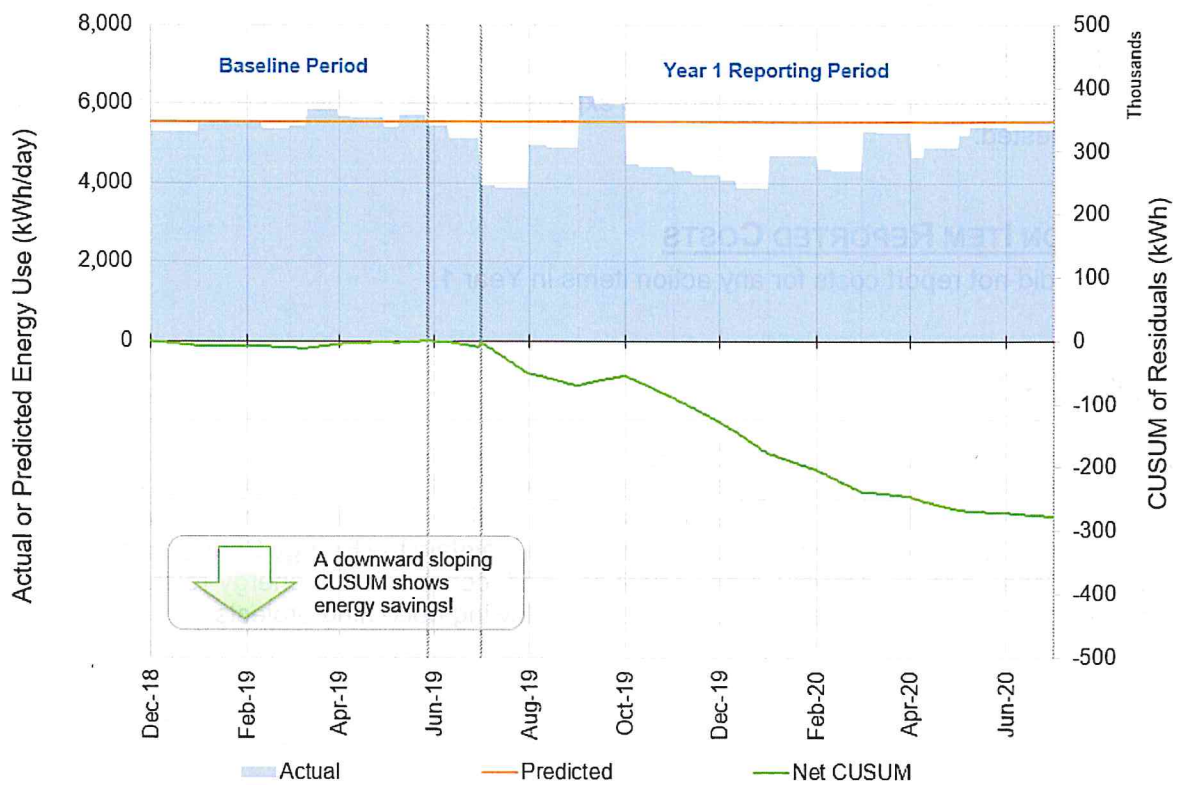


Figure 2. Year 1 actual and predicted energy, and CUSUM.

APPENDIX B. YEAR 1 COMPLETION REPORT SAVINGS SUMMARY

All reported savings are site-based values.

Table 6. SEM Savings

Year	Description	Result
1	① SEM savings	277,239 kWh
	② Percent SEM savings	13.6%

APPENDIX C. ADDITIONAL SEM RESOURCES

The St. Helens energy teams leveraged SENSEI effectively throughout SEM. As the following figures show, the cumulative savings showed improvement throughout the first year. The team also tracked events and numerous action item completion dates (identified by the numbered flags in Figure 3 and

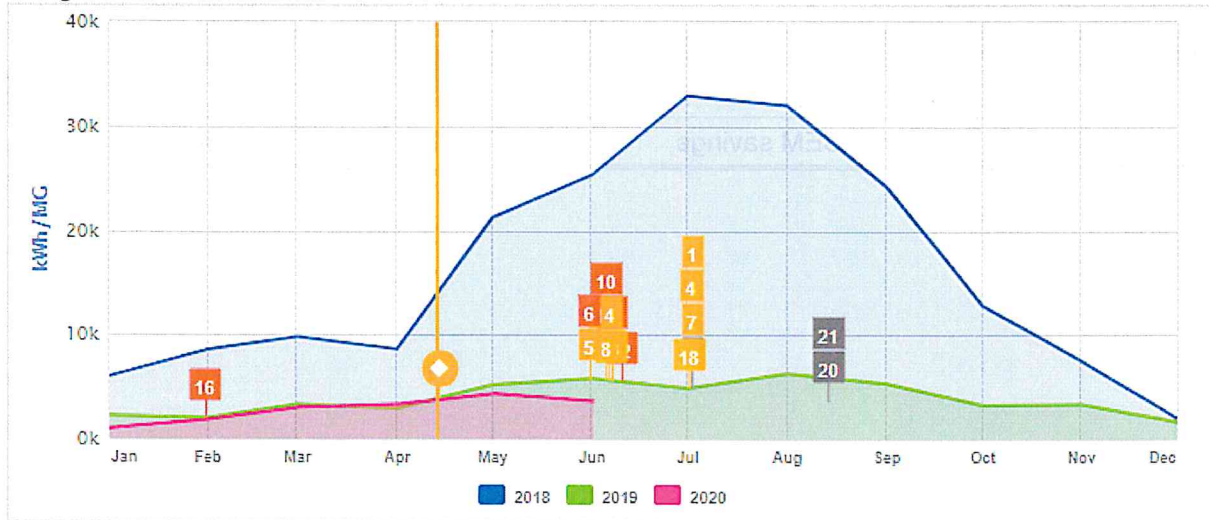


Figure 4).

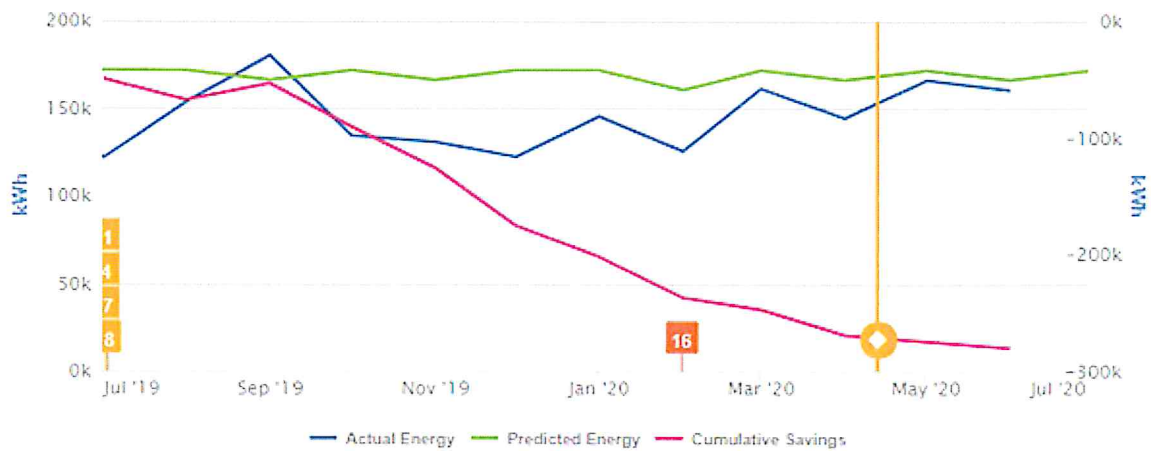


Figure 3. SENSEI screenshot: Year 1 performance, completed action items, and events.

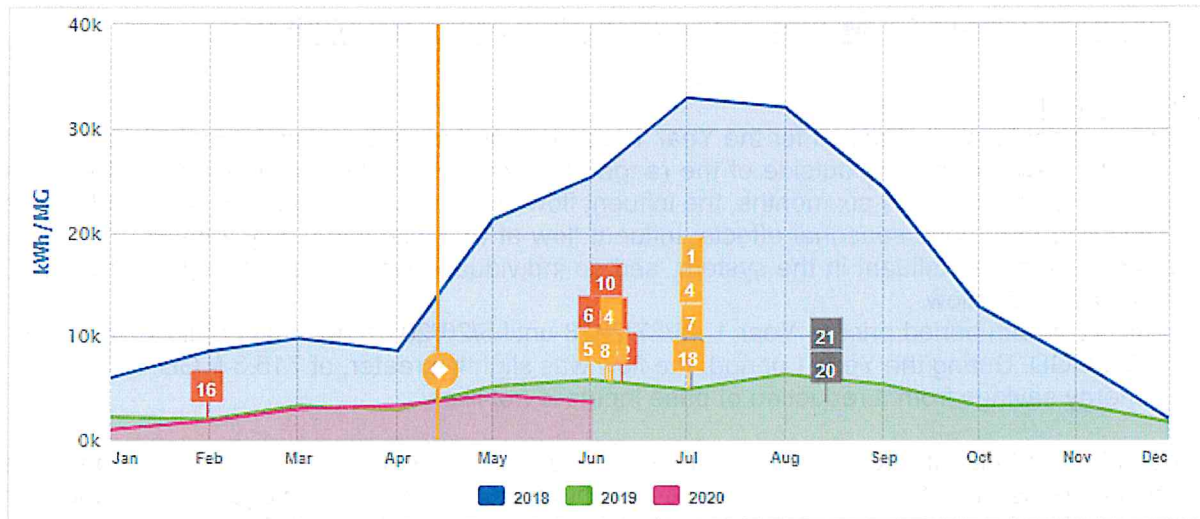


Figure 4. SENSEI screenshot: Year-over-year kWh/MG KPI tracking.

APPENDIX D. ENERGY MODEL DATA ANALYSIS AND ADJUSTMENTS

REVIEW OF VALID RANGE

Process variables were tracked for the Year 1 reporting period as a means to verify that process conditions have not moved outside of the range observed during the baseline period. Because the baseline period is only six months, the influent flow was also compared using a period before the baseline to remove seasonal effects. Influent flow at St. Helens is highly variable on a daily basis due to rainfall influent in the system, and so individual days may spike to greater than 10 million gallons if inflow.

For the 12 month period prior to Year 1, (5/27/2018 until 5/26/2019), the influent flow was a total of 653.6 MGD. During the Year 1 period, the flow was slightly greater, at 715.3 MGD. As a result, any energy savings from a reduction of base inputs is not likely.

Distribution of Influent flow is shown in Figure 5 below. The number of days in each period is different, so the days have been normalized to show equivalent percentages. The distribution of influent flow is similar between the six month baseline period and Year 1. Energy Residuals are shown for the monthly values in Figure 6, and the residuals are consistent between baseline and Year 1.

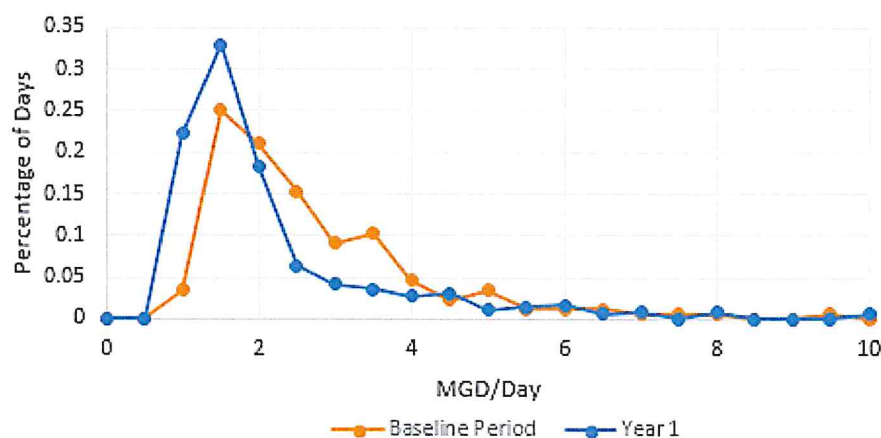


Figure 5. Distribution of influent flow, baseline vs. Year 1.

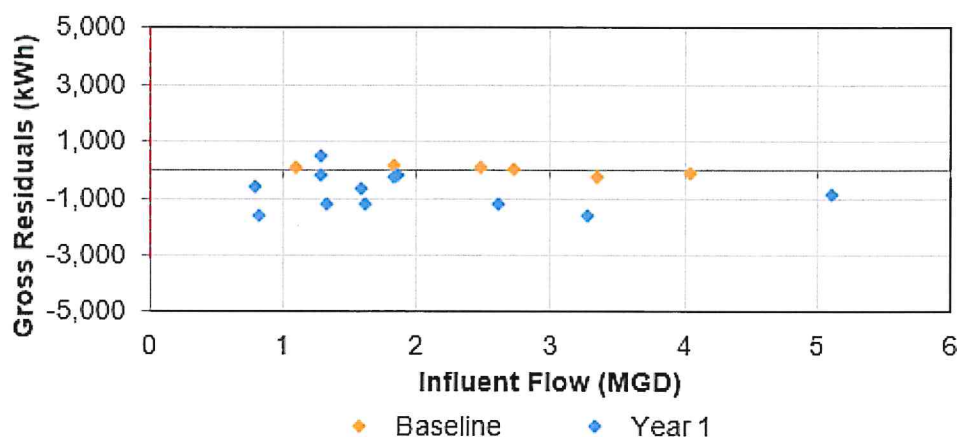


Figure 6. Energy residuals vs. influent flow.

REVIEW OF ENERGY SAVINGS

Because the energy model is a mean model, the energy residuals are evaluated using a $\pm 4\sigma$ limit and also a comparison of the baseline period and performance year data will be performed using an unpaired sample t-test to determine if the savings are statistically significant. Energy residuals are shown in Figure 7 on a monthly basis.

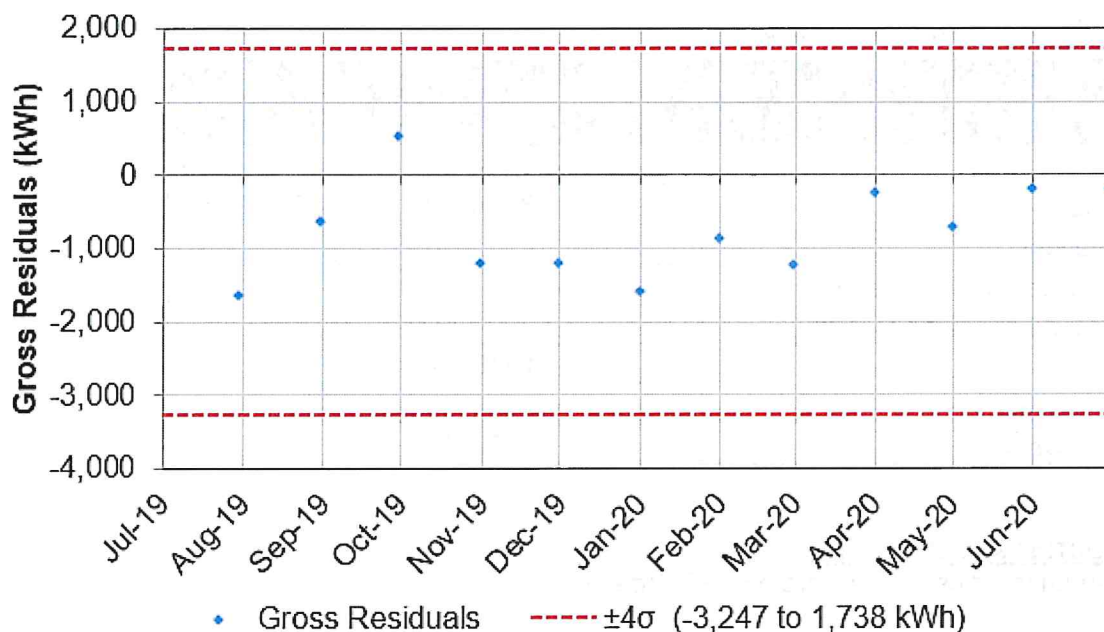


Figure 7. Gross energy residuals (actual – predicted).

STATISTICAL ANALYSIS

The baseline and Year 1 daily energy residuals were compared using an unpaired Student's t-test (unequal variances), to determine if the change in energy consumption is statistically significant. Because number of periods were different between the baseline and reporting period, an unpaired test is necessary. A null hypothesis $\mu_1 = \mu_2$ would indicate that both data sets are substantially equal, and the savings cannot be verified. The t-score from the statistical comparison will be compared to a standard table at an alpha of 20%.

Performing the t-test results in a t-statistic of 3.81, which is considerably larger than the two tail t-critical value of 1.35. Since the difference between the baseline and Year 1 energy use is statistically significant, the savings are considered to be valid. The results of the t-test are provided in Table 7 below.

Table 7. T-test of daily residual data.

t-Test: Two-Sample Assuming Unequal Variances		
	Baseline	Year 1
Mean	5,539.95	4,784.90
Variance	23,107.90	423,621.40
Observations	6	12
Hypothesized Mean Difference	0	
Degrees of Freedom	13	
t Stat	3.815874	
P(T≤t) two-tail	0.002142	
t Critical two-tail	1.350171	

NON-ROUTINE ADJUSTMENTS

No non-routine adjustments were made in Year 1.