City of Grand Island Utilities Department Annual Report for 2018

Utilities Department – Highlights for 2018

Production Division

Platte Generating Station

- The Production Division completed 962 corrective work orders and 3,491 preventative work orders.
- The Spring Outage was completed in May.
- Testing of a Powder Activated Carbon was conducted during the year. A final type was tested, and contract let.
- Cooling tower fan "B" support structure was replaced and placed back into service. The support structure was inspected when the gearbox was removed for rebuild and found to have structural defects that required replacement.
- A vacuum leak test was performed on the condenser and leaks that were found were repaired.
- Breaker testing and cleaning was completed during the outage.
- All power was turned off to the Platte Generating Station to do repairs in Substation D.
- An outage occurred when a boiler tube ruptured. The plant was shut down and the tube was repaired, tested and placed back on-line.
- Radioactive sources are used at Platte Generating Station to detect levels in coal silos and determine density of the lime slurry used for acid control. The radioactive material license was renewed.
- A new coal crusher was procured and installed.
- Diesel fuel was transferred from Platte Generating Station (PGS) to Burdick to perform fuel tank inspection at PGS, then transferred back to PGS to perform diesel fuel tank inspection at Burdick. The tanks are inspected every 10 years to ensure there is no corrosion developing that could lead to leaks.

Burdick Station

- Work continues on the decommissioning project. Information is being gathered for studies to move gas turbine supporting equipment from the Burdick Station building.
- Gas Turbine #2 was tested with liquid fuel and changes were made to instrument air to control the purge valves.
- The Hot Gas Path Inspection was completed on Gas Turbine #3. The unit was run for testing and was tuned. Turning was completed on Gas Turbine #2 also.
- NOx correlation testing was completed. NOx correlation testing is completed every five years. Testing is done to meet the air environmental regulations to show that the gas turbines are operating with the guidelines set by the EPA.
- A black start test of the Mobile Generating Station to Substation G was completed. The Production Division is ready to restore power if all other sources of power into Grand island are not available.
- A damaged crossfire tube was discovered between cans eight and nine on Gas Turbine #2 during a run on liquid fuel.
- The #2 bearing on Gas Turbine #3 was replaced through the exhaust tunnel. The unit ran successfully after the replacement was completed.
- The battery banks at Burdick Station were load tested. One bank had four bad cells that were replaced under warranty. Gas Turbine #2 had two cells fail and they were replaced.
- The bleed heat return valve controller failed on Gas Turbine #3. A new one was installed and configured by plant personnel. Gas Turbine #3 was placed back into service.
- Contracts were awarded to complete the Gas Turbine Controls Upgrade, Fuel Oil Tank and Pipe Cleaning and Engineering for modifying the Burdick Gas Turbine cooling water.

- Repairs to primary and secondary fuel nozzles and combustion liners were completed for Gas Turbine #3.
- Turning of Gas Turbine #2 and #3 was done.
- The DC system for Gas Turbine #1 was re-supplied from the #3 steam unit battery bank to allow for the future move of the #1 battery bank. This is in preparation to complete the Burdick Steam unit decommissioning project.

Water System

- The elevated water storage tank on South Engleman Road was completed and placed into service increasing the emergency supply of water and additional water during peak demands. The will be known as the Olson Water Tower.
- Pine Street Pumping Station's Programmable Logic Controller (PLC) was updated, installed and tested. Variable frequency drives now control pumps #1 and #2.
- The Pine Street Pumping Station Pump #3 was replaced. The original pump was built in 1920 when the Pumping Station was first built.
- The #2 low service pump motor failed at the Wellfield Pump House. It is a 600-horse power 2400VAC motor. A new motor is being purchased and will be installed for the 2019 summer pumping season. There are two other pumps that move water from the Wellfield into the City.
- Secondary containment was installed at the Wellfield Well Pump House for the electrical transformers. This will contain any oil from the transformers that set next to the Well Building.
- The uranium removal media was replaced in Vessel #1 of Train #1, tested and put back into service.
- The media was changed in the Water Remediation Technology uranium removal vessel #2 of train #2.
- The Burdick Reservoir was drained and cleaned.
- Roger's Reservoir #1 was cleaned and inspected.
- Wellfield Well #1 pump failed. The existing submersible pump was replaced with a new turbine pump and an existing motor was repurposed.
- Wellfield Wells #6 and #7 had CO_2 injection cleaning completed.

Water Department

- Statistics from the Water Shop Include:
  - 338 Work orders were opened, closed or are pending
  - 48 After hours Trouble Calls were responded to by the Water Shop
  - One Ludlow fire hydrant was change out at 13th & Piper Streets
  - One new fire hydrant was relocated and installed at 3rd & Kimball Streets
  - 2,337 Spring Hydrant checks
  - 2,728 Fall Hydrant checks
  - 954 Fire hydrants were painted
  - 264 Dead end fire hydrants were flushed
  - 7 Fire hydrants were repaired or replaced that had been damaged by hit & run drivers
  - One private fire hydrant was replaced and Third City Christian Church
  - 27 Broken Water Mains were repaired (2" through 12" mains)
  - One water main and service was repaired that had been damaged by a Contractor
  - 18 4" through 18" line valves were added, or were broken and replaced with new valves
  - 963 4" through 24" main line valves were exercised
  - 45 water mains/line valves were turned off and then back on for plumbers and contractors
  - 41 broken water services were checked by the Water Department
  - 12 Backflow preventers were tested for all City Departments by the Water Department
  - 107 Fire Hydrant Meters with Backflow Assemblies were set out for contractors
  - 3 Abandoned water mains/services were capped

- 132 ¾" to 1½ " service taps were made/replaced
- 50 2" to 12" Water main taps were done
- 65 1" Test taps were done for plumbers & contractors
- 145 New Water Meters were installed – 5/8" through 6"
- 306 Replacement meters were installed 5/8" through 6"
- 24 Meters were repaired or rebuilt
- 86,875 Gallons of water was sold to contractors/truck companies
- 20 Private water services were located/traced
- 164 Turn water services were done per office request
- 9,988 locates were performed that had been requested through Digger's Hotline of Nebraska

Backflow Program

2018 Backflow Prevention Device Testing Statistics:

- ✓ 4,697 First Notice reminders were mailed
- ✓ 1,035 Certified Letters Delivered
- ✓ 221 48 Hour Notices left at the door
- ✓ 34 Water Services shut off for failure to test

2018 Backflow Prevention Device Installation Statistics:

- ✓ 22 First Notices to require installation were mailed
- ✓ 18 Certified letters were delivered
- ✓ 2 48 Hour Notice was delivered at the door

Transmission – Phelps Control Center

- Design work was completed for a replacement HVAC system at Phelps Control Center. This is to replace the original 1968 system with a more efficient system. Installation of the new system is expected in 2019.
- Breaker J-30 was replaced due to an ongoing gas leak. The replacement breaker is a much simpler magnetic breaker with one moving part. This should drastically reduce future required maintenance.
- Protective relaying was installed, tested and put into service for 115 kV Transmission Line 1060. This is the last line needing upgraded.
- The Burdick Station cranking transformer had bushings replaced after an extended outage due to damage from animal contact.
- Modifications were made to the substation control buildings to allow for quick connection of portable generators in the event of a long-term outage.
- Breaker E-30 was replaced after a gas leak was discovered. The replacement breaker is identical to the breaker used to replace J-30.
- A fiber splicing trailer was purchased due to the increased reliance upon fiber optics for essential communications. This trailer allows for fiber repair and installation work in all weather conditions.
- A contract was approved with a vendor for an Outage Management System (OMS). The OMS will reduce response time to outages by determining the exact cause of an outage using information from various sources.
- Substation F south transformer was removed from service due to a gassing concern. An outside contractor was hired to perform an internal inspection and electrical testing of the transformer with no resolution determined. Monitoring will continue with the possibility of replacement in the future.

- A new 1-Megawatt Solar Farm was constructed and placed into service adjacent to Substation E near JBS Swift. This farm is owned and operated by AEP with the City purchasing all power generated.
- NERC compliance continues to be a hot topic with several standards being addressed this year. Facility ratings were updated as a result of various upgrades. NERC Compliance training was performed for System Protective Relay Coordination and Real Time Reliability Tasks.
- New fiber optics were installed at various locations to provide the necessary communications for network changes taking place.
- Animal guards were installed on the 13.8 kV south bus at Substation H. Animal guards will be installed at other locations as time permits.
- All fifty-one 115 kV transmission breakers were taken out of service and x-rayed. This inspection involves new x-ray technology that eliminates the need to physically open the breakers. This reduces the time required and the risk of introducing foreign contaminants into the breaker.
- Th old block wall around Substation F along Capital Avenue was replaced with a new pre-fabricated concrete wall similar to walls along interstate roadways. The new wall should last much longer and will need very little maintenance.
- All transmission metering was replaced with new metering due to obsolete and failing meters.
- Omaha Public Power District began Transmission Operator (TOP) Services for the City. NERC standards required the City to become a TOP or hire an outside company to perform TOP services. Due to the manpower requirements, the decision was made to hire an outside company to perform these services.
- The protective relaying panel for the Substation H north transformer was replaced with a new panel and new relays. This is the last transformer panel needing to be replaced.
- Panel clean-up was completed at Substations H and D. This involved the removal of all old electro-mechanical relays and associated wiring. The old steel panels will be replaced in 2019.

Underground Division

- Planned re-builds were integrated with service upgrades being done by customers. Combining the two met the needs of new customers and maintenance of the system.
  - Brachs Subdivision along LaMar Avenue west of Harrison
  - Twisters Gymnastics – 321 Stagecoach Road
  - 3231 Ramada Road to the north of Boarders Hotel
  - Central Community College Industrial Arts expansion

New Customer Services or Developing Areas

- Sterling Estates 10th Subdivision
- Copper Creek 10th, 11th and 12th Subdivisions
- Discount Tire – 2241 Diers Avenue
- Two triplexes at 2708 & 2714 S.t Patrick Avenue
- Gard properties – 3406 S. Blaine Street – for a lot split
- Lutz Accounting Building – 3320 James Road
- Midwest Truck Repair and Future Truck Wash – 2000 E. Highway 30
- Meadow Lane 7th Subdivision along the 3000 block of Goldenrod
- New Hall County Regional Airport Administration Building and South Hanger service
- Bimbo Bakery/Lacy complex – 4586 Gold Core Drive
- Tilley's Sprinkler and Landscaping – 3515 N. Highway 281
- Prairie Commons Subdivision and the new Hospital area – Highways 34 & 281
- Veterans Ballfield expansion – 2820 N. Broadwell Avenue

- Aspen Daycare – 1918 Aspen Circle
- The new 911 Center – 13th Street and North Road
- Cleburn and Eddy remediation site – 4th Street & Eddy Underpass area
- Stolley Park School – 1700 W. Stolley Park Road
- Kabota Dealership – 4625 E. Highway 30
- Popeyes Restaurant – 1309 Diers Avenue
- The strip mall in front of Orschelns – 411 S. Webb Road
- The elevated water storage tank – 997 S. Engleman Road
- Solar Array project near Substation E – 450 Museum Drive
- East open/loop run for Utilities Customer Service/Engineering building – Rae Road & Highway 281.
- Lassonde Subdivision – Habitat Housing on East Capital Avenue
- James Road Lift Station
- Riverbend Apartment – east & west open loop runs
- Bosselman – 3800 E. Highway 30 and Neidfeldt/Vontz site at Hamilton County Bridge

Underground Feeder – Capacity conduit and cable runs
- Along the south side of 13th Street, west and east of North Road
- Along the east side of North Road, north and south of the 13th Street in the area of the new roundabout
- Along the north side of Husker Highway/Highway 34 & 281
- Conduit north between James Road and Langenheder Street

Fiber cable and related conduit systems were installed for City/Utility Department needs
- Two crossings under North Road south of 13th Street
- Along the south side of 13th Street east of North Road
- Along the east side of North Road, north and south of 13th Street in the area of the new roundabout
- From Substation B, north under Faidley Avenue
- From Rogers Reservoir – 997 S. Engleman Road, to the Elevated Water Storage Tower
- From Rogers Reservoir to Substation B
- Water Shop
- Police Impound building – 810 S. Stuhr Road

Various Building and Equipment Maintenance
- Install roof ladders and conduit for cameras at the Utility Engineering office – 315. N. Jefferson
- Repaired various pad-mount and pole-mount transformers brought back into stock for reuse.
- Organized and handled pad-mount transformers for disposal

Street lighting underground was installed or serviced
- 13th Street and North Road, east to Diers Avenue as part of the 13th Street paving project
- Highways 281 & 2, due to construction
- 8th & Boggs Streets and White street light runs in conjunction with a water main project
- 3rd & Eddy Streets
- 310 Piper Street
- 2nd Street between Pine & Locust Streets as part of a sidewalk upgrade project
- Relocate a run along a vacated section of College Street between Lafayette and Custer

Replaced transformers and cables due to degradation of the transformer cabinets and electrical components or incidents
- Morningside Acres east of Stagecoach and Fairway Villas

- Olsson & Associates – 201 E. 2nd Street
- 829 Windridge
- Various areas of Kingswood Estates and Westpark Plaza
- 278 E. Highway 30
- Walmart South
- 608 Ravenwood Drive
- 811 – 819 West Delaware
- Rainbow Lake Subdivision

Staff Training and Grade School Safety Program

- Grade School Safety presentations: 30+ presentations at 10 schools for 2,316 students
- Excavation summit held by Common Ground Nebraska and Nebraska 811
- Reviewed operation of electronic overcurrent protective equipment (Vista)
- Mainsaver training sessions
- AED/CPR refresher class
- Organize equipment operator manuals
- Arc Flash refresher seminar
- Set up and reviewed basic principles of underground related electrical equipment with Overhead Division

Equipment and Building & Grounds Maintenance

- Installation of northeast entry door at the Thompson Building including exit/emergency light and electronic access
- Mowed and trimmed Substation F area at 2420 Carlton Avenue and outlying pad-mounted equipment
- Enyert Building – 366 N. Clark Street – Plumbing and subsequent floor slab needs
- Inspection of one half of the underground electric system
- Annual cleaning and testing of insulated protective gear
- Relocated several electrical fault indicators for improved coverage
- Crews responded to 6,625 requests for location of underground electric lines that had been requested through Digger Hotline

- Assisted other Departments or Divisions
  - Exchanged pump motor along South Blaine Street on the east side of PGS
  - Removed and reset cooling tower screens
  - Removed acid tank from the Burdick cooling tower area
  - De-energized, grounded, and re-energized the Platte pumping station for Variable Frequency Drive maintenance
  - Rerouted system for 480 transformers in place of previous aerial fed 2,400-volt system and allowed installation of open-loop feeds
  - Exchanged the pump motor on Well #3
  - Black start test of Gas Turbine #1
  - Offsite generation of Burdick Mobile Generating Station from Burdick to Wellfield entrance and back

  Substation Technicians:
  - Substation G transformer busing replacement
  - Breaker J-30 was changed out
  - Substation D potential transformers and related support structures

  Overhead Division – coordinated various electric & underground maintenance, transformer and cable changes, etc.
  - Hall County Housing area of 8th & 9th Streets and Boggs & White Streets
  - Commonwealth Business Park – Kaufman Avenue
  - Dodge School – 641 S. Oak Street which allowed for the rebuild of two risers

- Diamond Truck Wash – 6499 S. Highway 281
- Autumnwood Apartments – Yund & Sutherland area
- Richmond Subdivision – Diers & Faidley
- Hall & Stuhr Road area
- Engleman School – 1812 Mansfield Road
- Dollar General – Holiday Gardens
- Freedom Drive Subdivision

Overhead Division

- In 2018 the Overhead Division maintained and upgraded the overhead distribution lines which entailed 5,950 linear feet of single-phase line and 2,650 linear feet of 3-phase line being rebuilt. These upgrades eliminated old primary lines and secondary service wires to provide safer and more reliable service to utility customers and to keep the interruption indices (SAIDI) and (SAIFI) well below national averages.
- There was a major ice storm in April 2018 which contributed to a series of outages and the loss of 25 poles and many conductor and hardware repairs.
- Crews removed 1,600 linear feet of 3-phase wire at 333 D Road to relocate an existing well and allow for the installation of a new center pivot.
- Four 277/480 services were installed and removed for dewatering to allow for sewer line installations.
- Crews installed 13,120 linear feet of ADSS fiber from Substation B to the new elevated water storage tower on Engleman Road and 600 feet of ADDS fiber from Oak Street to the Kimball Reservoir. This will allow for the Utilities Department to have communication and controls at both sites.
- Two new poles were installed for Hall County Emergency Management to upgrade their emergency warning sirens.
- Overhead crews installed 5,900 feet of ADSS fiber from Substation B to the new 911 Center.
- Crews installed 1,500 feet of ADSS fiber from a Ruby Street splice can to the Union Pacific Railroad tracks for a future loop feed to Utilities Engineering offices.
- In October 2018, two crews joined Lincoln Electric System crews for ten days to assist with the power restoration in Tallahassee, Florida after Hurricane Michael destroyed electric line infrastructure in the area.
- Two wooden streetlight poles were replaced to accommodate Verizon small cell nodes for future wireless expansion.
- Twenty-five poles were relocated, and four primary feeder disconnects were installed along with installing 3,760 linear feet of T-2 conductor for the 13th Street Roundabout Project.
- In conjunction with the 13th Street Project, nine new street light poles with LED lights were installed and 19 lights were located and converted to LED.
- Osmose Utilities marked 49 poles that needed to be replaced because of deterioration. They were replaced in 2018.
- In an ongoing effort to maintain reliability with primary feeders, 13 switches/fuse disconnects were installed or upgraded.
- Ten primary poles and 18 streetlight poles were replaced that had been damaged by motor vehicles.
- The Overhead Division continued its efforts to keep vegetation clear of power lines. There were only 12 reported outages that were attributed to trees. This was accomplished with the division's own Tree Trimming Crew and the use of a contractor clearing 14 sections of lines and removing approximately 190 trees.
- In 2018, 19 high power sodium lights were converted to LED lights around Grand Island Senior High School to increase visibility and coincide with LED parking lot lights.
- Crews converted 350 high power sodium lights to LED lights in 2018.

- The Overhead Division re-banded 2,056 streetlight poles with an improved, more visible material.
- Line crews installed or replaced 268 transformers. This has improved system reliability and power quality for utility customers as load continues to increase.
- The automated meter infrastructure project continues to be a success. There are currently 185 water meters installed and 5,595 electric meters. The daily read percentage has been 99%. The system has been useful for meter readings, performing disconnects and troubleshooting for both water and electric service.
- This past year, 1,757 AMI meters were installed on delinquent accounts. In the process, 2,874 disconnect/connect commands were performed without rolling a truck.

Utility Warehouse Division

- The Utility Storeroom quoted, purchased, received and stocked $2,903,590.33 worth of materials in 2018. This represents the material that is on the inventory system.
- The Storeroom issued $2,532,372.95 worth of materials while salvaging, cleaning and restocking $376,189.48 worth of materials.
- The Storeroom purchased $651,038.39 worth of items for the Overhead, Underground and Storeroom divisions.
- 79,465 pounds of scrap aluminum, copper wire, electrical brass and ACSR wire was sold for $83,277.50.
- 251 obsolete/burned up transformers were processed and sold for $32,635.85.
- The Utility Storeroom came through the 2018 audit with no problems noted.

Utilities Engineering Division

- The Engineering Division provided full engineering services for the Utilities Department's electrical and water infrastructure projects. The work involves research, design, plans and specifications, construction surveys, inspection, observation and maintaining accurate maps and data records of the related infrastructure activities. Over the past year, work included the following:

- Over 40 separate overhead and/or underground power line projects to provide service for new subdivisions or commercial developments.
- Seventeen and 20 commercial water system projects totaling over 15,270 linear feet of new water mains and service lines.
- Drafted, edited and revised CADD files and GIS related database files.
- Prepared 49 easement and/or permit documents for department projects
- Prepared five contracts and/or requests for proposals.
- Inspected and tested water system improvement projects for compliance.
- Performed project related construction surveys using high-accuracy GPS.
- Implemented and maintained mobile technology resources for the Electric Overhead and Underground Divisions and the Water Division.
- Implemented the new City Website and began developing a GIUD subsite.
- Hosted the Heartland Community Food Bank's monthly distribution.

City of GRAND ISLAND UTILITIES DEPARTMENT

ANNUAL LOAD SUMMARY

Jan. 15, 2019

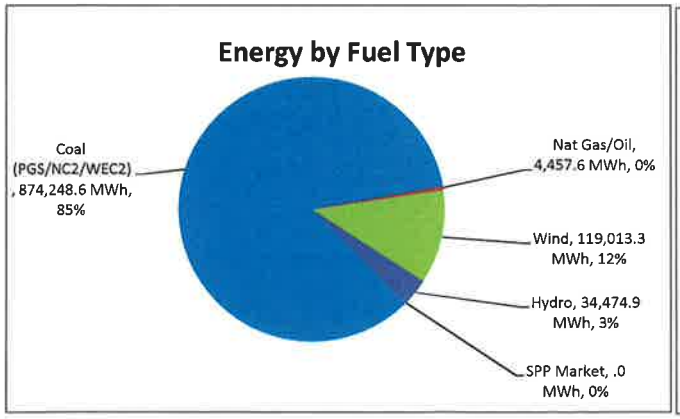
LOCAL GENERATION	2018
BURDICK STATION, STEAM UNIT:	
UNIT #3, PCC METER - Retired	.000 MWh
BURDICK STATION, STEAM UNIT AUXILIARIES	
GROFF ST. SUB. RESERVE SUPPLY	64.500 MWh
UNIT #3 RESERVE SUPPLY	424.400 MWh
BURDICK COOLING WATER	53.798 MWh
OIL FACILITIES	69.401
BURDICK STEAM NET TOTAL:	**-612.099 MWh**
BURDICK STATION, COMBUSTION TURBINES:	
GT-1, PCC METER	265.200 MWh
GT-2, PCC METER	2,813.900 MWh
GT-3, PCC METER	1,378.500 MWh
BURDICK STATION, COMBUSTION TURBINE AUXILIARIES	
GT-1, AUXILIARIES	131.080 MWh
GT-2 & GT-3 AUXILIARIES	1473.7
BURDICK COMBUSTION TURBINE NET TOTAL:	**2,852.820 MWh**
PLATTE GENERATING STATION:	
UNIT #1, SUB D METER	536,720.000 MWh
PLATTE GENERATING STATION AUXILIARIES	
RESERVE SUPPLY TRANSFORMER	2,227.900 MWh
WAREHOUSE	253.640 MWh
PGS COOLING WATER	340.958 MWh
PLATTE GENERATING STATION NET TOTAL:	**533,897.502 MWh**

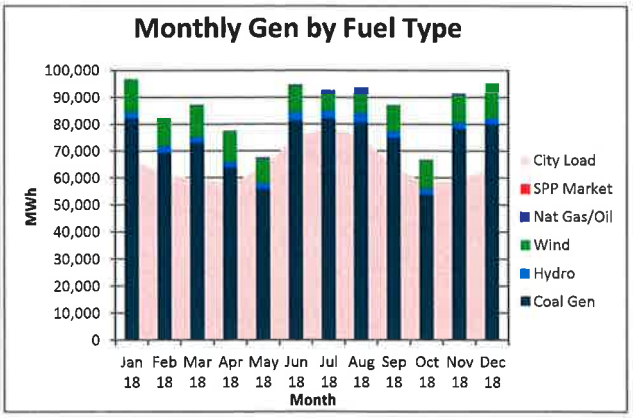
Copies:

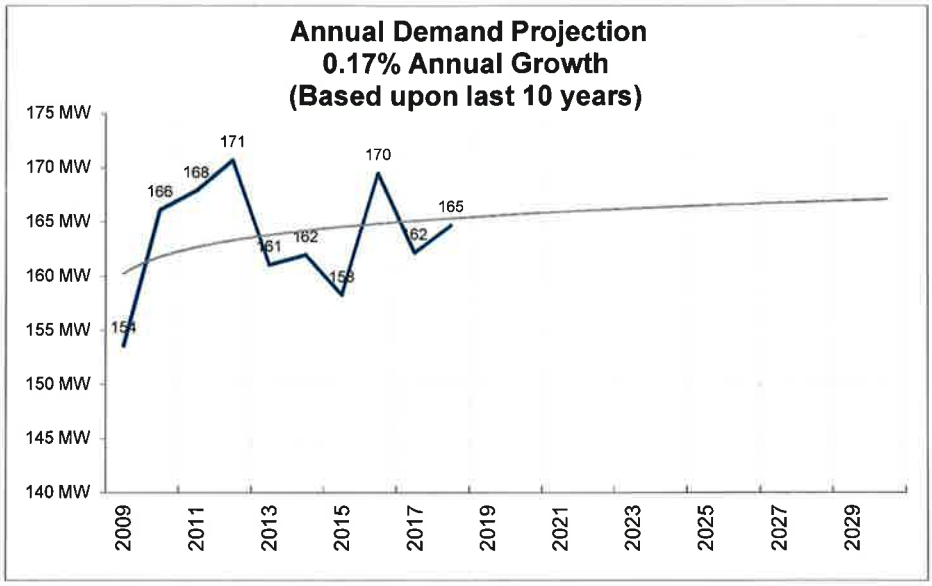
Tim Luchsinger	Travis Burdett
Ryan Schmitz	Jeff Mead
Darrell Dorsey	Keith Pobanz
Larry Keown	Darren Buettner
Tylor Robinson	Pat Gericke
Karen Nagel	Kathy Nelson
Cindy Martin	Phelps Control

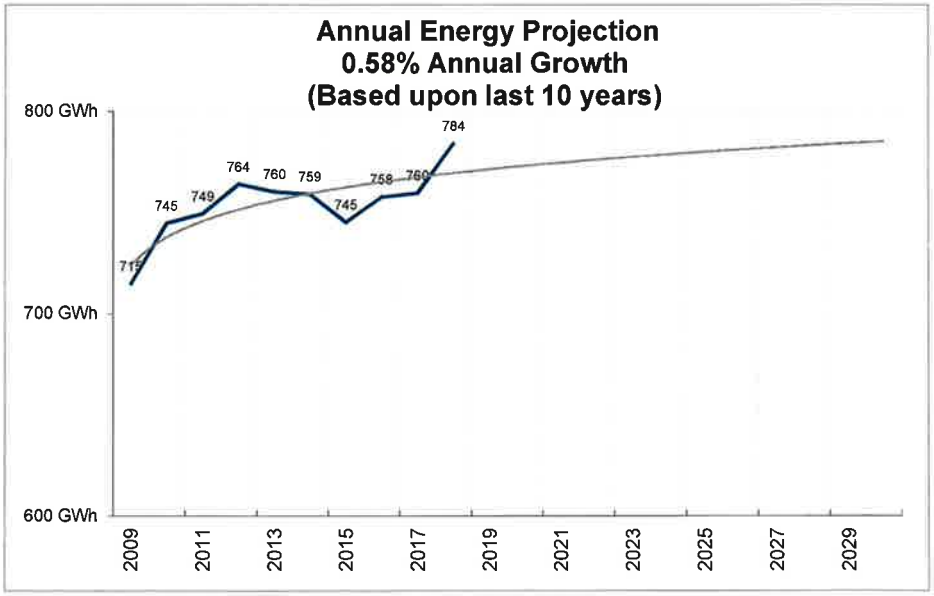
PARTICIPATION SHARES	2018
WAPA HYDRO	34,474.868 MWh
WIND PROJECTS	119,013.300 MWh
NEBRASKA CITY UNIT #2	264,853.000 MWh
WHELEN UNIT #2	72,675.600 MWh
INTERCHANGE & CITY DEMAND	
INTEGRATED MARKETPLACE	
IMPORT	788,493.700 MWh
EXPORT	541,151.100 MWh
NET MARKET IMPORT	**247,342.600 MWh**
METERED ENERGY IMPORT TO GRAND ISLAND	
LINE 1093	238,856.548 MWh
LINE 1145A	132,506.100 MWh
LINE 1145B	25,980.300 MWh
LINE 1149	12,853.948 MWh
LINE 1369	71,641.380 MWh
TOTAL TO GRAND ISLAND	**481,838.276 MWh**
METERED ENERGY EXPORT FROM GRAND ISLAND	
LINE 1093	861.604 MWh
LINE 1145A	27,796.100 MWh
LINE 1145B	101,761.700 MWh
LINE 1149	87,761.376 MWh
LINE 1369	15,644.100 MWh
TOTAL FROM GRAND ISLAND	**233,824.880 MWh**
SPP Meter Calibration / Station Aux (Record Only)	-670.796 MWh

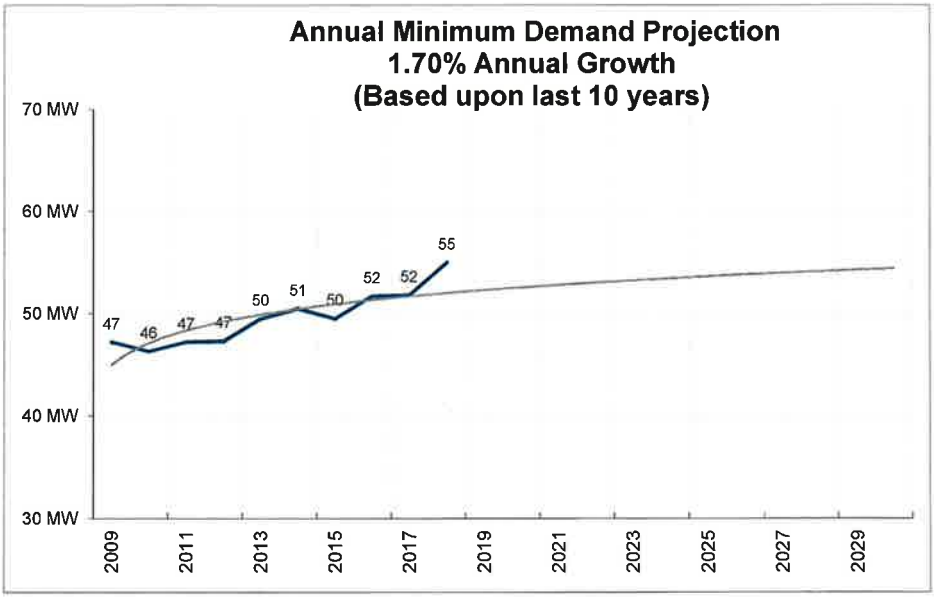
HOURLY PEAK DEMAND:	**164.700 MW**
DATE & TIME OF PEAK:	July 12th, 1700
HOURLY MINIMUM DEMAND:	**55.000 MW**
DATE & TIME OF MINIMUM:	Mar 4th, 0400
SYSTEM NET GENERATION:	**536,138.223 MWh**
NET METERED IMPORT:	248,013.396 MWh
SYSTEM NET DISTRIBUTION:	**784,151.619 MWh**

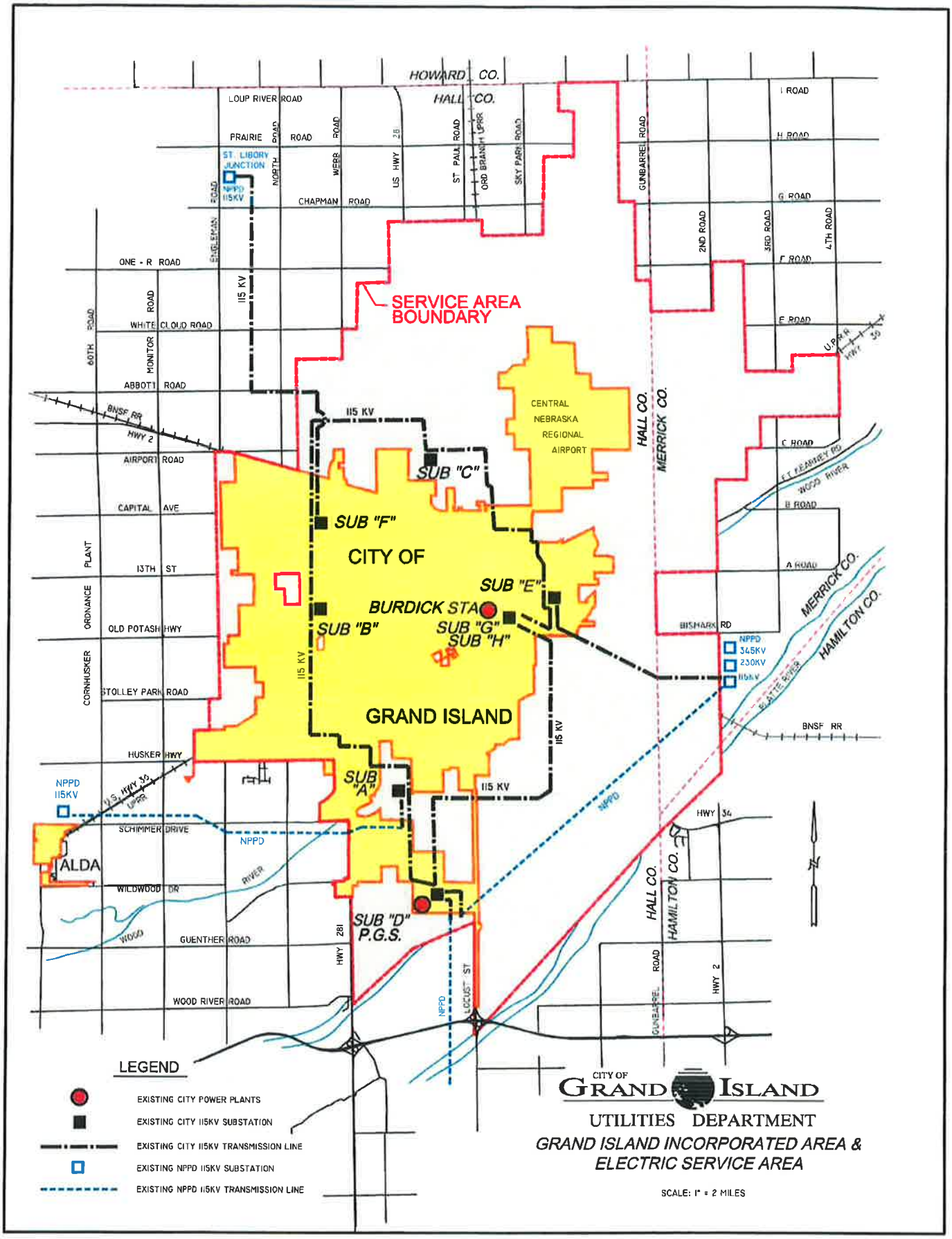





Annual Demand Projection
0.17% Annual Growth
(Based upon last 10 years)
175 MW
170 MW
165 MW
160 MW
155 MW
150 MW
145 MW
140 MW
154
166
168
171
161
162
158
170
162
165
2009
2011
2013
2015
2017
2019
2021
2023
2025
2027
2029


Annual Energy Projection
0.58% Annual Growth
(Based upon last 10 years)
800 GWh
700 GWh
600 GWh
715
745
749
764
760
759
745
758
760
784
2009
2011
2013
2015
2017
2019
2021
2023
2025
2027
2029


Annual Minimum Demand Projection
1.70% Annual Growth
(Based upon last 10 years)
70 MW
60 MW
50 MW
40 MW
30 MW
47
46
47
47
50
51
50
52
52
55
2009
2011
2013
2015
2017
2019
2021
2023
2025
2027
2029


HOWARD CO.
HALL CO.
LOUP RIVER ROAD
PRAIRIE ROAD
ROAD
NORTH ROAD
WEBB ROAD
US HWY 281
ST PAUL ROAD
ORD BRANCH UPRR
SKY PARK ROAD
GUNBARREL ROAD
I ROAD
H ROAD
G ROAD
2ND ROAD
3RD ROAD
4TH ROAD
F ROAD
E ROAD
ST. LIBORY JUNCTION
NPPD 115KV
CHAPMAN ROAD
ENGLEMAN ROAD
ONE - R ROAD
115 KV
SERVICE AREA BOUNDARY
60TH ROAD
MONITOR ROAD
WHITE CLOUD ROAD
ABBOTT ROAD
BNSF RR
HWY 2
AIRPORT ROAD
CAPITAL AVE
PLANT ROAD
13TH ST
ORDNANCE ROAD
OLD POTASH HWY
CORNHUSKER ROAD
STOLLEY PARK ROAD
HUSKER HWY
U.S. HWY 30
UPRR
NPPD 115KV
SCHIMMER DRIVE
ALDA
WILDWOOD DR
WOOD RIVER
GUENTHER ROAD
WOOD RIVER ROAD
HWY 281
LOCUST ST
NPPD
SUB "A"
SUB "B"
SUB "C"
SUB "D" P.G.S.
SUB "E"
SUB "F"
SUB "G"
SUB "H"
BURDICK STA
CITY OF
GRAND ISLAND
CENTRAL NEBRASKA REGIONAL AIRPORT
HALL CO.
MERRICK CO.
HAMILTON CO.
C ROAD
FT KEARNEY RD
WOOD RIVER
B ROAD
A ROAD
BISMARK RD
NPPD 345KV
230KV
115KV
PLATTE RIVER
BNSF RR
HWY 34
HALL CO.
HAMILTON CO.
GUNBARREL ROAD
HWY 2
LEGEND
EXISTING CITY POWER PLANTS
EXISTING CITY 115KV SUBSTATION
EXISTING CITY 115KV TRANSMISSION LINE
EXISTING NPPD 115KV SUBSTATION
EXISTING NPPD 115KV TRANSMISSION LINE
CITY OF GRAND ISLAND
UTILITIES DEPARTMENT
GRAND ISLAND INCORPORATED AREA & ELECTRIC SERVICE AREA
SCALE: 1" = 2 MILES

CITY OF GRAND ISLAND
UTILITIES DEPARTMENT

2018 Electrical Feeder Summary

Distribution Lines

Line Type	Total (ft)	Total (mi)
OHL 3 Phase	1,572,705	297.9
OHL 1 Phase	465,224	88.1
OHL Unknown Phase	0	0.0
UGL 3 Phase	404,045	76.5
UGL 1 Phase	521,037	98.7
UGL Unknown Phase	1,296	0.2

Transformers

Polemount Transformers	Count	KVA
1 Phase	9,365	302,551
3 Phase	3	32,000
N/A	0	0
	9,368	334,551

Padmount Transformers	Count	KVA
1 Phase	2,346	91,135
3 Phase	927	914,805
N/A	0	0
	3,273	1,005,939

Total Connected KVA	**1,410,585**

Capacitor Banks

Bank Type	Count
Switched	62
Fixed	57
	119

CITY OF GRAND ISLAND

Working Together for a Better Tomorrow. Today.

Utilities Department
Platte Generating Station
Fiscal Year Fuel Summary
October 1, 2017 - September 30, 2018

Coal		
Beginning Inventory	**October 1, 2017**	124,961.00 Tons
Total Coal Received		294,169.36 Tons
Total Coal Fired		-327,942.00 Tons
Total Cost Monthly Adjustments		-11,766.78 Tons
Coal Adjustments (Fiscal)		14,712.92 Tons
Final Coal Inventory	**September 30, 2018**	**94,134.50** Tons
Average Coal Heat Value		8433 BTU/LB
Average Coal Sulfur		0.27%
PGS No. 2 Fuel Oil		
Beginning Inventory	**October 1, 2017**	309,146.88 Gals
Total Fuel Oil Received		0.00 Gals
Total Fuel Oil Fired		-88,783.00 Gals
Other Fuel Oil Used		-16,495.20 Gals
Total Fuel Oil Adjustment		9,604.72 Gals
Final Fuel Oil Inventory	**September 30, 2018**	**213,473.40** Gals
BURDICK STATION		
No. 2 Fuel Oil		
Beginning Inventory	**October 1, 2017**	3,468.96 Gals
Total Fuel Oil Received		236,948.00 Gals
Total Fuel Oil Fired Gas Turbines		-114,873.54 Gals
Other Fuel Oil Used		-3,468.96 Gals
Total Fuel Oil Adjustment		8,961.94 Gals
Final Fuel Oil Inventory	**September 30, 2018**	**131,036.40** Gals
No. 6 Fuel Oil		
Inventory	**October 1, 2017**	45,011.16 Gals
Total Fuel Oil Received		0.00 Gals
Total Fuel Oil Fired Unit 1		0.00 Gals
Total Fuel Oil Fired Unit 2		0.00 Gals
Total Fuel Oil Fired Unit 3		0.00 Gals
Total Fuel Oil Adjustment		4,738.02 Gals
Final Fuel Oil Inventory	**September 30, 2018**	**49,749.18** Gals
Total No. 6 Fuel Oil Fired		0
Natural Gas		
Total Gas Fired Unit 1		0.00 MCF
Total Gas Fired Unit2		0.00 MCF
Total Gas Fired Unit 3		0.00 MCF
Total Gas Turbine GT1		4,379.00 MCF
Total Gas Turbine GT2		29,339.00 MCF
Total Gas Turbine GT 3		8,414.00 MCF
Total Gas Fired		**42,132.00** MCF

Revised 10/18/2018
Lynn M/Darrell D-PGS
Darren B-Finance
Pat G-Utilities Admin
Travis B/Keith P
Ryan Schmitz
Larry K/Cindy-Burdick

CITY OF GRAND ISLAND

Working Together for a Better Tomorrow. Today.

Utilities Department
Platte Generating Station
Fiscal Year Water Summary
October 1, 2017 - September 30, 2018

Report Totals				
Water From Wellfield	3,770,809,893.56	Gals		
High Pressure Wells	19,256,980.40	Gals		
Burdick Wells	80,502,954.54	Gals		
PGS Wells	607,835,993.00	Gals		
Cleburn Well	0.00	Gals		
Burdick Pumping Station	1,164,209,361.19	Gals		
Pine Street Pumping Station	636,234,358.54	Gals		
Rogers Pumping Station	2,065,698,322.11	Gals		
Water Distributed to City	3,885,399,022.24	Gals		
Water to Burdick Station	85,177,854.54	Gals		
Water to PGS	608,187,193.00	Gals		
Water Pumped - Permit 10266	3,770,809,893.56	Gals		
Water Pumped - Permit 10302	707,595,927.94	Gals		
Total Water Distributed	4,574,089,169.78	Gals		
Total Groundwater Pumped	4,478,405,821.50	Gals		
Water Unaccounted For	-2.14%			
Burdick Station City Water Use	20,603,560.00	Gals		
Pine Street Station City Water Use	244,628.70	Gals		
Daily Maximum				
Permit No. 10266 (Wellfield)	22,247,920.93	Gals	on	6/16/2018
Permit No. 10302 (In-Town Wells)	2,999,572.80	Gals	on	8/14/2018
Total Groundwater Pumped	24,556,520.93	Gals	on	6/16/2018
Water Distributed to City	22,369,407.91	Gals	on	6/15/2018

cc: Lynn M/Darrell D-PGS
Darren B-Finance
Pat G-Utilities Admin
Travis B/Keith P
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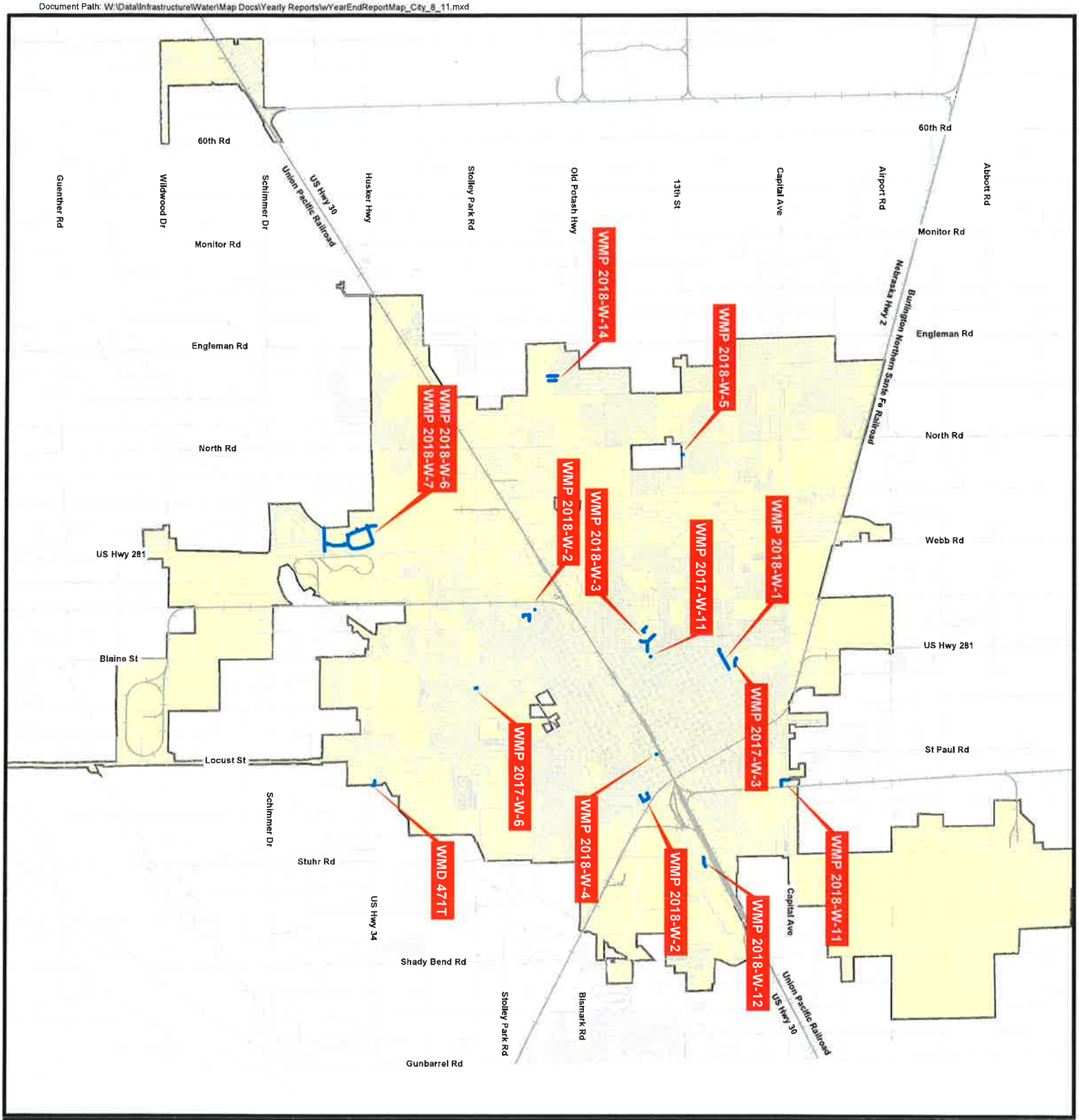
Larry K/Cindy-Burdick

Fiscal Year-Water
acessimport.xls
Revised 10/18/2018

Document Path: W:\Data\Infrastructure\Water\Map Docs\Yearly Reports\wYearEndReportMap_City_8_11.mxd



City of Grand Island
Utilities Department

LEGEND

Watermain
Property Lines
City Limits

2018 Construction Districts/Projects
1/14/2019

Water Distribution Network

CITY OF GRAND ISLAND UTILITIES DEPARTMENT

2018 Pipe Totals (4" and Larger)

3-Jan-19

City

Distribution Length by Diameter (Includes Hydrant Assembly)

Year	4	6	8	10	12	14	16	18	20	24	30	36	Total	Percent Growth
2013	22,967	722,883	212,765	115,123	188,955	17,276	106,322	54,116	71,561	7,368	787	11	1,520,134	N/A
2014	24,778	721,888	219,528	117,238	196,756	17,276	107,521	54,134	71,538	7,339	787	11	1,538,794	1.23%
2015	24,745	719,963	221,431	119,711	197,813	17,284	115,557	54,135	71,645	7,335	787	11	1,550,417	0.76%
2016	24,939	752,141	229,610	121,272	200,540	17,244	115,557	53,788	74,060	7,222	787	11	1,597,171	3.02%
2017	25,461	754,284	230,955	122,372	204,276	17,245	115,526	53,965	76,489	7,222	787	11	1,608,592	0.72%
2018	25,461	754,704	232,674	127,185	208,177	17,242	115,420	53,958	76,613	6,877	787	11	1,619,109	0.65%

Transmission Length by Diameter

Year	4	6	8	10	12	14	16	18	20	24	30	36	Total
2013	0	0	0	0	0	0	0	0	0	0	78,391	25	78,416
2014	0	0	0	0	0	0	0	0	0	0	78,425	12	78,437
2015	0	0	0	0	0	0	0	0	0	0	78,425	12	78,437
2016	0	0	0	0	0	0	0	0	0	0	78,502	12	78,514
2017	0	0	0	0	0	0	0	0	0	0	78,496	12	78,508
2018										270	78,498	12	78,780

Reservoir Length by Diameter

Year	4	6	8	10	12	14	16	18	20	24	30	36	Total
2013	0	0	0	0	0	0	0	0	0	929	0	805	1,734
2014	0	0	0	0	0	0	0	0	0	932	0	805	1,737
2015	0	0	0	0	0	0	0	0	0	932	0	805	1,737
2016	0	0	0	0	0	0	0	0	0	932	0	858	1,790
2017	0	0	0	0	0	0	0	0	98	932	0	858	1,888
2018									384	925		858	2,167

Well Header Length by Diameter

Year	4	6	8	10	12	14	16	18	20	24	30	36	Total
2013	58	139	0	17,943	913	3,238	0	7,834	3,567	5,970	3,443	2,042	45,147
2014	58	139	0	17,762	913	3,233	0	7,856	3,553	5,974	3,440	2,049	44,977
2015	58	139	0	17,749	913	3,233	0	7,856	3,553	5,974	3,440	2,049	44,964
2016	58	139	0	17,754	913	3,233	1,670	7,856	3,553	5,974	3,440	2,049	46,639
2017	58	131	0	17,754	913	3,233	1,670	7,856	3,553	5,974	3,440	2,049	46,631
2018	58	226		17,752	913	3,233	1,670	7,856	3,553	5,974	3,440	2,049	46,723

Total D+T+R+W

Year	Total (ft)	Total (mi)
2013	1,645,431	312
2014	1,663,945	315
2015	1,675,555	317
2016	1,724,114	327
2017	1,735,620	329
2018	1,746,778	331

Private

Fire Protection/Service Length by Diameter

Year	4	6	8	10	12	14	16	18	20	24	30	36	Total	Percent Growth
2013	40,924	93,690	60,341	30,513	12,705	266	429	0	6	0	0	0	238,874	N/A
2014	41,079	96,436	62,037	30,596	17,407	266	429	0	6	0	0	0	248,256	3.93%
2015	41,642	97,195	62,747	31,192	17,415	266	429	0	6	0	0	0	250,892	1.06%
2016	43,013	104,798	61,629	26,189	17,415	0	229	0	0	0	0	0	253,273	0.95%
2017	43,915	105,900	63,112	26,587	17,382	0	229	0	0	0	0	0	257,125	1.52%
2018	45,047	107,872	64,767	26,583	17,385	0	229	0	0	0	0	0	261,882	1.85%

Total (City+Private)

Year	Total (ft)	Total (mi)
2013	1,884,305	357
2014	1,912,201	362
2015	1,926,447	365
2016	1,977,387	375
2017	1,992,745	377
2018	2,008,660	380