

**Gallatin Public Utilities (GPU)  
Normalized Cost Matrix - CAP EX + OP EX**

	CI Thornburg (Sensus)	CI Thornburg (Sensus): Drill	United Systems (Itron)	United Systems (Itron): Drill
<b>AMI System</b>				
AMI Network Infrastructure & Installation	\$ 161,466		\$ 516,000	
AMI Network and Deployment Tools (Qty 2)	\$ 15,314		\$ 19,000	
AMI Headend One Time Setup Fee	\$ 18,725		\$ 36,000	
Professional Services	\$ 51,000		\$ 512,100	
Year 1 Hosting Fees	\$ 3,120		\$ 41,361	
<b>TOTAL AMI SYSTEM</b>	<b>\$ 249,625</b>	<b>\$ 249,625</b>	<b>\$ 1,124,461</b>	<b>\$ 1,124,461</b>
<b>Meters and Equipment</b>				
Water Meters + Electronic Registers (Replace)	\$ 2,102,311		\$ 2,939,695	
Water Meter Endpoints/Radios	\$ 1,496,264		\$ 992,420	
Gas Index & Endpoint (Retrofit)	\$ 1,528,450		\$ 785,780	
<b>TOTAL METERS AND EQUIPMENT</b>	<b>\$ 5,127,025</b>	<b>\$ 5,127,025</b>	<b>\$ 4,717,895</b>	<b>\$ 4,717,895</b>
<b>Meter and Equipment Installation</b>				
Installation of Water Meter, Register, and Endpoint	\$ 585,873		\$ 728,540	
Installation of Gas Endpoint	\$ 310,002		\$ 422,580	
Professional Services	\$ -		\$ 14,400	
Meter Lid Replacement (unit price)	\$ 393,914		\$ 534,380	
Meter Lid Drilling (unit price) incl.TTL if required		\$ 76,340		\$ 694,694
<b>TOTAL INSTALLATION</b>	<b>\$ 1,289,789</b>	<b>\$ 972,215</b>	<b>\$ 1,699,900</b>	<b>\$ 1,860,214</b>
<b>Meter Data Management System</b>				
MDM Software/Hardware	\$ -		\$ 25,000	
Customer Portal Software/Hardware	\$ 27,250		\$ 12,500	
Professional Services	\$ -		\$ 112,500	
Integration Services	\$ 10,125		\$ 54,000	
Year 1 Hosting Fees	\$ 750		\$ 47,201	
<b>TOTAL MDMS</b>	<b>\$ 37,375</b>	<b>\$ 37,375</b>	<b>\$ 204,000</b>	<b>\$ 204,000</b>
<b>TOTAL CAP EX</b>	<b>\$ 6,703,814</b>	<b>\$ 6,390,630</b>	<b>\$ 7,746,256</b>	<b>\$ 8,020,570</b>
<b>TOTAL 5-YEAR OP EX - AMI</b>	<b>\$ 135,122</b>	<b>\$ 135,122</b>	<b>\$ 219,591</b>	<b>\$ 219,591</b>
<b>TOTAL 5-YEAR OP EX - MDMS</b>	<b>\$ 153,568</b>	<b>\$ 153,568</b>	<b>\$ 250,597</b>	<b>\$ 250,597</b>
<b>ALL IN 5-YEAR COST</b>	<b>\$ 6,988,635</b>	<b>\$ 6,675,450</b>	<b>\$ 8,127,882</b>	<b>\$ 8,402,196</b>

**NOTES:**

CP test point - \$550  
RDM - \$425  
Leak detection - ?

CP module - \$150  
RDM - \$400  
Leak detection - \$379,600\* + \$4,600 in annual software fees  
\*USS is agreeable to add the \$75,000 for 5000 units and upgrade all ert to a three port ert. That would save GPU approximately \$150,000 over the

**Gallatin Public Utilities (GPU)  
AMI**

	Aclara	CI Thornburg (Sensus)	United Systems (Itron)	Notes/Comments
<b>TOTAL CAPITAL COSTS</b>	<b>\$ 481,050</b>	<b>\$ 246,505</b>	<b>\$ 1,083,100</b>	
<b>Item/Service</b>				
<b>AMI Network Infrastructure &amp; Installation</b>				
Collectors + other hardware	\$ 221,192.75	\$ 104,633.00	\$ 405,000.00	
Installation + services	\$ 41,000.00	\$ 56,833.00	\$ 111,000.00	Sensus pricing includes new 90' tower at Industrial Park site
Extendable towers	\$ -		\$ -	
<b>Subtotal</b>	<b>\$ 262,192.75</b>	<b>\$ 161,466.00</b>	<b>\$ 516,000.00</b>	
<b>AMI Network and Deployment Tools (Qty 2)</b>				
RF installation hand-helds	\$ 8,886.00	\$ 14,314.00	\$ 19,000.00	
RF installation programming device	\$ 600.00	\$ 1,000.00	\$ -	
<i>Optional Mobile Collection System</i>	\$ -	\$ -	\$ 11,000.00	<i>Not included in cost comparison</i>
<b>Subtotal</b>	<b>\$ 9,486.00</b>	<b>\$ 15,314.00</b>	<b>\$ 19,000.00</b>	
<b>Headend System</b>				
AMI Headend One Time Setup Fee	\$ 10,450.00	\$ 15,725.00	\$ 36,000.00	
Backhaul modems		\$ 3,000.00		
<b>Subtotal</b>	<b>\$ 10,450.00</b>	<b>\$ 18,725.00</b>	<b>\$ 36,000.00</b>	
<b>Professional Services</b>				
Project Management	\$ 88,102.00	\$ 45,000.00	\$ 183,600.00	<i>Eliminated \$108,000 from Itron for Enhanced PM services</i>
Network Design/System Planning	\$ -	\$ -	\$ 117,000.00	
System Acceptance Testing	\$ -	\$ -	\$ 85,500.00	
Travel & Expense (incl. Materials, Freight)	\$ 100,819.44	\$ -	\$ 72,000.00	
Training and Documentation	\$ 10,000.00	\$ 6,000.00	\$ -	
AMI/MDMS System Integration	\$ -	\$ -	\$ 54,000.00	
<b>Subtotal</b>	<b>\$ 198,921.44</b>	<b>\$ 51,000.00</b>	<b>\$ 512,100.00</b>	
<b>Sales Tax</b>	\$ -	\$ -	\$ -	
<b>0%</b>				

**Gallatin Public Utilities (GPU)  
METERS AND METER EQUIPMENT**

	Aclara	CI Thornburg (Sensus)	United Systems (Itron)	
<b>TOTAL CAPITAL COSTS</b>	<b>\$ 3,847,042</b>	<b>\$ 5,127,025</b>	<b>\$ 4,717,895</b>	

Item/Service	Qty	Aclara	CI Thornburg (Sensus)	United Systems (Itron)	Notes/Comments
<b>Water Meters + Electronic Registers (Replace)</b>					
1/2"	3	\$ 344.27	\$ 330.00	\$ 435.00	
5/8" x 3/4"	14708	\$ 1,687,859.12	\$ 1,617,880.00	\$ 2,132,660.00	
1"	239	\$ 40,038.79	\$ 39,435.00	\$ 45,410.00	
1-1/2"	9	\$ 4,497.73	\$ 6,795.00	\$ 5,040.00	
<b>Subtotal</b>		<b>\$ 1,732,739.91</b>	<b>\$ 1,664,440.00</b>	<b>\$ 2,183,545.00</b>	
<b>Large Meter Replace:</b>					
2" (Full Replace)	252	\$ 168,306.82	\$ 225,540.00	\$ 428,400.00	
3" (Full Replace)	1	\$ 848.20	\$ 1,116.00	\$ 2,250.00	
4" Turbo (Full Replace)	8	\$ 9,720.00	\$ 17,376.00	\$ 20,400.00	
4" Compound (Full Replace)	19	\$ 55,832.26	\$ 49,875.00	\$ 97,850.00	
6" Turbo (Full Replace)	9	\$ 26,371.17	\$ 35,856.00	\$ 41,850.00	
6" Compound (Full Replace)	14	\$ 59,109.54	\$ 63,504.00	\$ 107,100.00	
8" Turbo (Full Replace)	1	\$ 3,292.00	\$ 6,640.00	\$ 6,950.00	
8" Compound (Full Replace)	4	\$ 24,779.76	\$ 29,308.00	\$ 41,600.00	
10" Turbo (Full Replace)	1	\$ 4,502.12	\$ 8,656.00	\$ 9,750.00	
<b>Subtotal</b>	<b>15268</b>	<b>\$ 352,761.87</b>	<b>\$ 437,871.00</b>	<b>\$ 756,150.00</b>	
<b>Water Meter Endpoints/Radios</b>					
Water Meter Endpoint Total (Qty 15268)		\$ 916,080.00	\$ 1,496,264.00	\$ 992,420.00	Assume no TTL antenna (Itron and Aclara)
<b>Subtotal</b>		<b>\$ 916,080.00</b>	<b>\$ 1,496,264.00</b>	<b>\$ 992,420.00</b>	
<b>Gas Index &amp; Endpoint (Retrofit)</b>					
Gas Meter Endpoint Total (Qty 14091)		\$ 845,460.00	\$ -	\$ -	
Small	13865	\$ -	\$ 1,439,025.00	\$ 762,575.00	
Medium		\$ -	\$ 63,675.00	\$ -	
Large	1036	\$ -	\$ 25,750.00	\$ 23,205.00	
<b>Subtotal</b>	<b>14901</b>	<b>\$ 845,460.00</b>	<b>\$ 1,528,450.00</b>	<b>\$ 785,780.00</b>	

**Gallatin Public Utilities (GPU)  
Installation Cost Proposal**

	Aclara	CI Thornburg (Sensus)	United Systems (Itron)	Notes/Comments
<b>TOTAL CAPITAL COSTS</b>	<b>\$ 1,502,631</b>	<b>\$ 1,366,129</b>	<b>\$ 2,394,594</b>	

**Item/Service**

**Water Meters & Meter Equipment Installation**

*Installation of Water Meter, Register, and Endpoint*

1/2"	\$ 79.41	\$ 96.00	\$ 120.00	
5/8" x 3/4"	\$ 389,319.98	\$ 470,656.00	\$ 589,680.00	
1"	\$ 6,326.32	\$ 8,126.00	\$ 10,215.00	
1-1/2"	\$ 496.31	\$ 2,115.00	\$ 1,800.00	
2" - retrofit	\$ 5,558.69	\$ -	\$ 9,400.00	Not included in cost comparison - Assume replace (see line 23 adder)
3" - retrofit	\$ 22.06	\$ -	\$ 40.00	Not included in cost comparison - Assume replace (see line 23 adder)
4" - retrofit	\$ 1,191.15	\$ -	\$ 1,080.00	Not included in cost comparison - Assume replace (see line 23 adder)
6" - retrofit	\$ 1,014.68	\$ -	\$ 920.00	Not included in cost comparison - Assume replace (see line 23 adder)
8" - retrofit	\$ 330.87	\$ -	\$ 200.00	Not included in cost comparison - Assume replace (see line 23 adder)
10" - retrofit	\$ 66.17	\$ -	\$ 40.00	Not included in cost comparison - Assume replace (see line 23 adder)
<b>Subtotal</b>	\$ 404,405.64	\$ 480,993.00	\$ 613,495.00	

**Large Meter Replace (Incremental Cost):**

Installation Cost (all >= 2" meters)	\$ 105,312.31	\$ 104,880.00	\$ 115,045.00
<b>Subtotal</b>	\$ 105,312.31	\$ 104,880.00	\$ 115,045.00

**Gas Meters Equipment Installation**

*Installation of Gas Endpoint*

Small	\$ 303,589.72	\$ 310,002.00	\$ 422,580.00
Large	\$ 10,886.61	\$ -	\$ -
<b>Subtotal</b>	\$ 314,476.33	\$ 310,002.00	\$ 422,580.00

**Professional Services**

Project Management	\$ 194,288.24	\$ -	\$ 14,400.00
Work Order Tracking/Geocoding	\$ -	\$ -	\$ -
Box cleanout (Vactor Truck)	\$ -	\$ -	\$ -
Training and Documentation	\$ -	\$ -	\$ -
<b>Subtotal</b>	\$ 194,288.24	\$ -	\$ 14,400.00

**Water Meter Lid Drill/Replacement**

Meter Lid Replacement (unit price)	\$	388,723.28	\$	393,914.40	\$	534,380.00	Aclara and Itron technology are more cost-effective to replace lids, but note this is general estimate. Exact lid sizes and qty to drill v replace will be determined during installation.
Meter Lid Drilling (unit price) incl.TTL if required	\$	95,425.00	\$	76,340.00	\$	694,694.00	Sensus technology is more cost-effective to drill lids, but note this is general estimate. Exact lid sizes and qty to drill v replace will be determined during installation.
<b>Subtotal</b>	\$	484,148.28	\$	470,254.40	\$	1,229,074.00	

**Other Installation Services**

*Warehousing, office space, staging area*

*Not included in cost comparison- can work with GPUs space*

**Gallatin Public Utilities (GPU)  
MDMS Cost Proposal**

	Aclara	CI Thornburg (Sensus)	United Systems (Itron)	Central Services Association	Harris	Smart Energy Systems	Notes/Comments
<b>TOTAL CAPITAL COST</b>	\$ -	\$ 37,375	\$ 204,000	\$ 152,877	\$ 95,000	\$ 23,400	
<b>MDM Software/Hardware</b>							
MDMS One Time License Fee (Setup)	\$ -	\$ -	\$ 25,000.00	\$ 89,475.00	\$ -	\$ -	
MDM Analytics Hosting Fee	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	
Extended Infrastructure Support (Harris - Non Hosted)	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	
AMI Connector TBD (included)	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	
<b>Subtotal</b>	\$ -	\$ -	\$ 25,000.00	\$ 89,475.00	\$ -	\$ -	
<b>Customer Portal Software/Hardware</b>							
Customer Portal One Time Setup Fee	\$ -	\$ 27,250.00	\$ 12,500.00	\$ -	\$ 10,000.00	\$ -	
<b>Subtotal</b>	\$ -	\$ 27,250.00	\$ 12,500.00	\$ -	\$ 10,000.00	\$ -	
<b>Professional Services</b>							
Project Management	\$ -	\$ -	\$ 54,000.00	\$ 3,402.00	\$ 15,000.00	\$ 23,400.00	
System Design and Configuration			\$ 27,000.00		\$ 10,000.00		
System Acceptance Testing			\$ 27,000.00		\$ 10,000.00		
Training and Documentation	\$ -	\$ -	\$ 4,500.00	\$ -	\$ 15,000.00		
<b>Subtotal</b>	\$ -	\$ -	\$ 112,500.00	\$ 3,402.00	\$ 50,000.00	\$ 23,400.00	
<b>Integration Services</b>							
MDM/AMI System Integration	\$ -	\$ -	\$ 27,000.00	\$ 15,000.00	\$ 15,000.00	\$ -	
Customer Portal/UMS2000 Integration	\$ -	\$ -	\$ -	\$ 30,000.00	\$ -	\$ -	
MDM/ CIS System Integration	\$ -	\$ 10,125.00	\$ 27,000.00	\$ 15,000.00	\$ 20,000.00	\$ -	
<b>Subtotal</b>	\$ -	\$ 10,125.00	\$ 54,000.00	\$ 60,000.00	\$ 35,000.00	\$ -	
<b>Analytics Option</b>							
Phase 2 - Professional Services	\$ -	\$ -	\$ -	\$ -	\$ 35,000.00	\$ -	<i>Not included in cost comparison</i>
<b>Subtotal</b>	\$ -	\$ -	\$ -	\$ -	\$ 35,000.00	\$ -	

	Growth Rate	2017 Year 1	2018 Year 2	2019 Year 3	2020 Year 4	2021 Year 5	Total	Notes
<b>Aclara</b>		\$ 47,995	\$ 47,995	\$ 47,995	\$ 47,995	\$ 49,944	\$ 241,924	
Annual AMI Headend Software Hosting Fee	5.00%	\$ 38,000	\$ 38,000	\$ 38,000	\$ 38,000	\$ 39,900	\$ 191,900	Normal annual escalation rate at 5% starting in year 4
Annual STAR Programmer Software Fee	5.00%	\$ 975	\$ 975	\$ 975	\$ 975	\$ 1,024	\$ 4,924	
Backhaul cost (41 collectors)	0.00%	\$ 9,020	\$ 9,020	\$ 9,020	\$ 9,020	\$ 9,020	\$ 45,100	
<b>CI Thornburg (Sensus)</b>		\$ 3,120	\$ 31,689	\$ 32,546	\$ 33,429	\$ 34,338	\$ 135,122	
Annual AMI Headend Software Hosting Fee	3.00%	\$ -	\$ 28,569	\$ 29,426	\$ 30,309	\$ 31,218	\$ 119,522	start in year 2
Annual Backhaul Cost	3.00%	\$ 3,120	\$ 3,120	\$ 3,120	\$ 3,120	\$ 3,120	\$ 15,600	No backhaul included in proposal but Utility can expect \$45-85 in monthly cell fees per collector (x4). Assumed 3% increase from cell carrier.
Annual Maintenance Fee OPTIONAL	3.00%	\$ 7,000	\$ 7,210	\$ 7,426	\$ 7,649	\$ 7,879	\$ 37,164	OPTIONAL extended warranty program for collector units
<b>United Systems (Itron)</b>		\$ 41,361	\$ 42,602	\$ 43,880	\$ 45,196	\$ 46,552	\$ 219,591	
Annual AMI Headend Software Hosting Fee	3.00%	\$ 35,253	\$ 36,311	\$ 37,400	\$ 38,522	\$ 39,678	\$ 187,163	Standard escalation of 3% increase per year
Annual Maintenance Fees	3.00%	\$ 6,108	\$ 6,291	\$ 6,480	\$ 6,674	\$ 6,875	\$ 32,428	Standard escalation of 3% increase per year
Annual Backhaul Cost	0.00%	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	The pricing for this can be removed from the proposal. All of Itron's hosted solutions get free cellular data backhaul with each CCU.
Annual Network Operations Support Fee OPTIONAL	0.00%	\$ 90,832	\$ 90,832	\$ 90,832	\$ 90,832	\$ 90,832	\$ 454,160	OPTIONAL, This is for Itron Total Management of AMI System with onsite troubleshooting and replacement of AMI equipment
Annual Leak Detection Software Fees OPTIONAL	0.00%	\$ 4,600	\$ 4,600	\$ 4,600	\$ 4,600	\$ 4,600	\$ 23,000	OPTIONAL, but required if GPU wants leak detection sensors

	Growth Rate	Year 1	Year 2	Year 3	Year 4	Year 5	Total	Notes
<b>Aclara</b>		\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	
MDM Annual Hosting Fee	0.00%							
Customer Portal Annual Hosting Fee	0.00%							
<b>CI Thornburg (Sensus)</b>		\$ 750	\$ 37,480	\$ 38,604	\$ 39,762	\$ 40,955	\$ 153,568	
MDMS Annual Hosting Fee	3.00%	\$ -	\$ 30,269	\$ 31,177	\$ 32,112	\$ 33,076	\$ 126,634	Standard escalation of 3% annual for first 5 years; start in year 2
Customer Portal Annual Hosting Fee	3.00%	\$ -	\$ 6,438	\$ 6,631	\$ 6,830	\$ 7,035	\$ 26,934	start in year 2
Annual Text Block Fee (6000/year)	3.00%	\$ 750	\$ 773	\$ 796	\$ 820	\$ 844	\$ 3,982	
<b>United Systems (Itron)</b>		\$ 47,201	\$ 48,617	\$ 50,076	\$ 51,578	\$ 53,125	\$ 250,597	
MDM Software Annual Hosting Fee	3.00%	\$ 41,093	\$ 42,326	\$ 43,596	\$ 44,903	\$ 46,251	\$ 218,168	Standard escalation of 3% increase per year
Annual Maintenance Fee	3.00%	\$ 6,108	\$ 6,291	\$ 6,480	\$ 6,674	\$ 6,875	\$ 32,428	
<b>Central Services Association</b>		\$ 56,077	\$ 56,468	\$ 56,867	\$ 57,993	\$ 59,143	\$ 286,548	
MDM Software Annual Hosting Fee	2.00%	\$ 19,544	\$ 19,935	\$ 20,334	\$ 20,740	\$ 21,155	\$ 101,708	Average yearly increase of 2% results in \$21,579 by 2022 (rate is locked in for initial 3 years after contract signature)
Microsoft Software Assurance (annual)	2.00%	\$ 521	\$ 521	\$ 521	\$ 521	\$ 521	\$ 2,605	
Annual Maintenance Fees	2.00%	\$ 36,012	\$ 36,012	\$ 36,012	\$ 36,732	\$ 37,467	\$ 182,235	Average yearly increase of 2% results in \$39,761 by 2022 (rate is locked in for initial 3 years after contract signature)
<b>Harris</b>		\$ 82,500	\$ 82,500	\$ 82,500	\$ 82,500	\$ 82,500	\$ 412,500	
MDM Software Annual Hosting Fee	0.00%	\$ 82,500	\$ 82,500	\$ 82,500	\$ 82,500	\$ 82,500	\$ 412,500	Subscription of \$2.75/meter/year (based on 30K meters)
Phase 2 Analytics Annual Hosting Fee	0.00%	\$ 31,500	\$ 31,500	\$ 31,500	\$ 31,500	\$ 31,500	\$ 157,500	Subscription of \$.35/meter/yr/module (based on 30K meters and 3 modules) Phase 2 - Outage Supervision, Distribution Optimization, Process Automation.
<b>Smart Energy Systems</b>		\$ 21,000	\$ 21,000	\$ 21,000	\$ 21,000	\$ 21,000	\$ 105,000	
Customer Portal SaaS Subscription Fee	0.00%	\$ 21,000	\$ 21,000	\$ 21,000	\$ 21,000	\$ 21,000	\$ 105,000	Includes 30,000 user subscriptions assuming discounted price (20%) for 5-year term. Additional subscriptions can be purchased in 500 subscription-bundles for \$0.88 per subscription per year .