

Consultant Services Authorization

Firm	Black and Veatch Corporation
Master Agreement No.	18-066
CSA No.	18-066-04
Project Name	Horizontal Asset Risk Analysis
Project Description	The project will analyze horizontal assets (potable, reclaimed, raw, and wastewater) and document the risk and consequence of failure, which can be used to identify renewal and replacement opportunities in the future.
Projects Exhibits and Attachments	Exhibit "A"- Scope of Services Exhibit "B"-Fee Schedule (Master Agreement) Exhibit "C"-Reimbursable Cost Schedule (if applicable) Exhibit "D"-Insurance Documents
Duration (in days)	This authorization shall be in full force and effect until the Consultant completes all services as identified in Exhibit "A".
Compensation	\$ 371,385
Special Contract Conditions	NA
Insurance Requirements	Professional Liability
Liquidated Damages	\$ 0.00 Per Day
Budget Source/Availability	42011.680536034.5666000.6897003

IN WITNESS WHEREOF, the parties hereto have executed this CSA on this ____ day of _____, 20__.

Attest:
STACY M. BUTTERFIELD

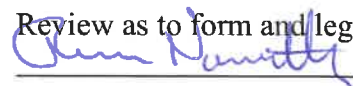
POLK COUNTY, a Political subdivision
of the State of Florida

By: _____
Deputy Clerk


By: _____
Chairman
Board of County Commissioners

Date Approved by Board: _____

Review as to form and legal sufficiency


County Attorney's Office Date: _____

Attest:


Corporate Secretary



SEAL

Date: _____

Black & Veatch Corporation
CONSULTANT COMPANY NAME


Authorized Corporate Officer

Rafael E. Frias III, Associate Vice President
[Printed Name and Title]

Date: 6/13/2022

Exhibit A

Consultant Services Authorization

18-066-04

Horizontal Asset Risk Analysis

Black & Veatch, (Consultant) entered into a Master Consulting Agreement (Agreement) with Polk County, Florida (County) on December 18, 2018. Pursuant to this Agreement, the County has requested that the Consultant provide certain professional services in support of Horizontal Asset Risk Analysis (Project) as further detailed in this Consultant Services Authorization.

A. Project Background and Description

The County continues to expand their asset management program and is desirous of categorizing assets based on criticality and risk of failure. This Project will focus on the County's horizontal assets including identifying consequence of failure and determining likelihood of failure for horizontal assets within the potable water distribution system, the gravity sewer collection system, the force main transmission system, the reclaimed water distribution system and the raw water transmission system. The County has requested that the Consultant provide engineering services in support of the Project.

B. Scope of Services

Upon authorization to proceed from the County, the Consultant will provide the following identified services. The Consultant shall ensure that all documents produced by the Consultant for the County will be consistent with the Polk County Utilities Standards and Specifications Manual, latest edition, and other County requirements. This authorization shall be in full force and effect until the Consultant completes all services as described in the Consultant Services Authorization and any subsequent modifications hereto.

Phase 100 – Project Management

Task 101 – Project Management

This task consists of overall management of the Project including contract administration, budget management, invoicing, monthly status reports, scheduling, and coordination with the County.

Task 102 – Kick-off Meeting and Review Meetings

The Consultant will attend one kickoff meeting with the County. The Consultant will prepare a meeting agenda and meeting minutes. Meeting minutes shall be distributed within three working days of the date of the meeting.

- Kick-Off Meeting
- Data Quality Analyses and Initial Risk Criteria Workshop [Five total, one for each system]
- Gravity Main System Operations Interview (focused on condition of the system)
- Criteria Framework Development Workshop [Five total, one for each system]
- Rehabilitation Planning & Decision Tree Development [Five total, one for each system]
- Technical Memorandum Review Workshop
- Horizontal Asset Risk Analysis Results Stakeholder Workshop

Phase 200 – Support Services

Task 201 – Water Main Risk Assessment

A. Data Quality Analyses:

Consultant will review the distribution system Geographic Information System (GIS) network and pipe attribute data provided by the County for consistency and completeness appropriate to support the risk-based prioritization analysis. At a minimum, the following pipe attribute data will be required to support the risk prioritization: unique ID, installation date, material, and diameter. Consultant will provide a summary of the findings and provide a list of the pipe records where the attribute data should be reviewed and/or updated. Based on initial review of the County GIS data, installation year is missing for the majority of the pipes (about 99%), material is missing for about 1% of the pipes, and diameter is missing for less than 1% of the pipes.

Based on the data gap results from the data attribute analysis, the Consultant will develop a methodology to populate pipe attribute data gaps for the installation date, where this information is not complete in the GIS for pipe segments included in the analysis.

B. Service Life Estimation:

The Consultant will use typical industry standards, knowledge from County staff, and/or professional judgement to estimate the average life expectancy for each material type within the water distribution system for use in developing related risk criteria.

C. Risk Framework Development:

In coordination with the County, the Consultant will develop initial water main likelihood of failure (LOF) and consequence of failure (COF) criteria used to determine the risk (e.g., pipe size, work history, water complaint history, break history, age, proximity to critical customer, max/min operating pressures, soil corrosion, etc.) and respective scoring methodology. A main break analysis will be performed to identify the number of breaks per water pipe segment and develop cohort break rates. In coordination with the County, the Consultant will define the foundation for how the risk model will be set-up and delivery of results including review of risk classifications/management strategy groups for planning level R&R needs, typically set-up as a 5x5 risk matrix with defined groupings. The risk framework and selected risk criteria will be coordinated for use in all risk assessments. Consultant will submit a data request for available data to support the risk criteria review and development. Data should be provided in Excel spreadsheet, GIS shapefile or geodatabase format, and, where applicable, should include the related pipe ID for data linking.

D. Model Development and Execution:

In coordination with the above Risk Framework Development task, the Consultant will develop the risk model to determine LOF and COF scores for each individual water main segment included in the analysis from information acquired from the County's GIS. Using the LOF and COF scores, Consultant will calculate overall risk scores and assign the risk classification per water main pipe segment in the GIS. Consultant will present initial results and final results for County review. The Consultant's Excel spreadsheet-based risk model tool and GIS toolbox are anticipated to be used and will be provided to the County.

Task 202 – Gravity Main Risk Assessment

A. Data Quality Analyses:

Consultant will review the gravity collection system GIS network and pipe attribute data provided by the County for consistency and completeness appropriate to support the risk-based prioritization analysis. At a minimum, the following pipe attribute data will be required to support the risk prioritization: unique ID, installation date, material, and diameter. Consultant will provide a summary of the findings and provide a list of the pipe records where the attribute data should be reviewed and/or updated. Based on initial review of the County GIS data, installation year is missing for the majority of the pipes (about 98%), material is missing for about 1% of the pipes, and diameter is missing for about 2% of the pipes.

Based on the data gap results from the data attribute analysis, the Consultant will develop a methodology to populate pipe attribute data gaps for the installation date, where this information is not complete in the GIS for pipe segments included in the analysis.

B. CCTV Data Review:

The Consultant will review results/input from the Gravity Main System Operations Interview identifying areas of concern for inclusion into the risk framework/likelihood of failure criteria to represent the condition of the gravity main system.

C. Service Life Estimation:

The Consultant will use typical industry standards, knowledge from County staff, and/or professional judgement to estimate the average life expectancy for each material type within the gravity main system for use in developing related risk criteria.

D. Risk Framework Development:

In coordination with the County, the Consultant will develop initial gravity sewer main likelihood of failure (LOF) and consequence of failure (COF) criteria used to determine the risk (e.g. pipe size, age, proximity to critical customers/facilities, operating pressures, work history, breaks, or leaks, soil corrosion, roads, railroads, water bodies, etc.) and respective scoring methodology. In coordination with the County, the Consultant will review/define the foundation for how the risk model will be set-up and delivery of results including review of risk classifications/management strategy groups for planning level

R&R needs, typically set-up as a 5x5 risk matrix with defined groupings. The risk framework and selected risk criteria will be coordinated for use in all risk assessments. Consultant will submit a data request for available data to support the risk criteria review and development. Data should be provided in Excel spreadsheet, GIS shapefile or geodatabase format, and, where applicable, should include the related pipe ID for data linking.

E. Model Development and Execution:

In coordination with the above Risk Framework Development task, the Consultant will develop the risk model to determine LOF and COF scores for each individual gravity sewer main segment included in the analysis from information acquired from the County's GIS. Using the LOF and COF scores, Consultant will calculate overall risk scores and assign the risk classification per gravity sewer main pipe segment in the GIS. Consultant will present initial results and final results for County review and approval. The Consultant's Excel spreadsheet-based risk model tool and GIS toolbox are anticipated to be used and will be provided to the County.

Task 203 – Force Main Risk Assessment

A. Data Quality Analyses:

Consultant will review the force main system GIS network and pipe attribute data provided by the County for consistency and completeness appropriate to support the risk-based prioritization analysis. At a minimum, the following pipe attribute data will be required to support the risk prioritization: unique ID, installation date, material, and diameter. Consultant will provide a summary of the findings and provide a list of the pipe records where the attribute data should be reviewed and/or updated. Based on initial review of the County GIS data, installation year is missing for the majority of the pipes (about 98%), material is missing for about 1% of the pipes, and diameter is missing for less than 1% of the pipes.

Based on the data gap results from the data attribute analysis, the Consultant will develop a methodology to populate pipe attribute data gaps for the installation date, where this information is not complete in the GIS for pipe segments included in the analysis.

To support the risk prioritization and future condition assessment planning, the Consultant will split the force main GIS pipe segments into smaller pipe segments (typically 50-foot to align with various inspection tools) for use in the analysis. The existing pipe ID will be maintained and a new pipe ID will be assigned to each of the pipe records.

B. Service Life Estimation:

The Consultant will use typical industry standards, knowledge from County staff, and/or professional judgement to estimate the average life expectancy for each material type within the force main system for use in developing related risk criteria.

C. Risk Framework Development:

In coordination with the County, the Consultant will develop initial force main likelihood of failure (LOF) and consequence of failure (COF) criteria used to determine the risk (e.g., pipe size, age, proximity to critical customers/facilities, operating pressures, work history, breaks, or leaks, soil corrosion, roads, railroads, water bodies, etc.) and respective scoring methodology. In coordination with the County, the Consultant will review/define the foundation for how the risk model will be set-up and delivery of results including review of risk classifications/management strategy groups for planning level R&R needs, typically set-up as a 5x5 risk matrix with defined groupings. The risk framework and selected risk criteria will be coordinated for use in all risk assessments. Consultant will submit a data request for available data to support the risk criteria review and development. Data should be provided in Excel spreadsheet, GIS shapefile or geodatabase format, and, where applicable, should include the related pipe ID for data linking.

D. Model Development and Execution:

In coordination with the above Risk Framework Development task, the Consultant will develop the risk model to determine LOF and COF scores for each individual force main segment included in the analysis from information acquired from the County's GIS. Using the LOF and COF scores, Consultant will calculate overall risk scores and assign the risk classification per force main pipe segment in the GIS. Consultant will present initial results and final results for County review and approval. The Consultant's Excel spreadsheet-based risk model tool and GIS toolbox are anticipated to be used and will be provided to the County.

Task 204 – Reclaimed Water Risk Assessment

A. Data Quality Analyses:

Consultant will review the reclaimed water main system GIS network and pipe attribute data provided by the County for consistency and completeness appropriate to support the risk-based prioritization analysis. At a minimum, the following pipe attribute data will be required to support the risk prioritization: unique ID, installation date, material, and diameter. Consultant will provide a summary of the findings and provide a list of the pipe records where the attribute data should be reviewed and/or updated. Based on initial review of the County GIS data, installation year is missing for the majority of the pipes (about 98%), material is missing for less than 1% of the pipes, and diameter is missing for less than 1% of the pipes.

Based on the data gap results from the data attribute analysis, the Consultant will develop a methodology to populate pipe attribute data gaps for the installation date, where this information is not complete in the GIS for pipe segments included in the analysis.

B. Service Life Estimation:

The Consultant will use typical industry standards, knowledge from County staff, and/or professional judgement to estimate the average life expectancy for each material type within the reclaimed water main system for use in developing related risk criteria.

C. Risk Framework Development:

In coordination with the County, the Consultant will develop initial reclaimed water main likelihood of failure (LOF) and consequence of failure (COF) criteria used to determine the risk (e.g. pipe size, age, proximity to critical customers/facilities, operating pressures, work history, breaks, or leaks, soil corrosion, roads, railroads, water bodies, etc.) and respective scoring methodology. In coordination with the County, the Consultant will review/define the foundation for how the risk model will be set-up and delivery of results including review of risk classifications/management strategy groups for planning level R&R needs, typically set-up as a 5x5 risk matrix with defined groupings. The risk framework and selected risk criteria will be coordinated for use in all risk assessments. Consultant will submit a data request for available data to support the risk criteria review and development. Data should be provided in Excel spreadsheet, GIS shapefile or

geodatabase format, and, where applicable, should include the related pipe ID for data linking.

D. Model Development and Execution:

In coordination with the above Risk Framework Development task, the Consultant will develop the risk model to determine LOF and COF scores for each individual reclaimed water main segment included in the analysis from information acquired from the County's GIS. Using the LOF and COF scores, Consultant will calculate overall risk scores and assign the risk classification per reclaimed water main pipe segment in the GIS. Consultant will present initial results and final results for County review and approval. The Consultant's Excel spreadsheet-based risk model tool and GIS toolbox are anticipated to be used and will be provided to the County.

Task 205 – Raw Water Main Risk Assessment

A. Data Quality Analyses:

Consultant will review the raw water main system GIS network and pipe attribute data provided by the County for consistency and completeness appropriate to support the risk-based prioritization analysis. At a minimum, the following pipe attribute data will be required to support the risk prioritization: unique ID, installation date, material, and diameter. Consultant will provide a summary of the findings and provide a list of the pipe records where the attribute data should be reviewed and/or updated. Based on initial review of the County GIS data, installation year is missing for all of the pipes and diameter is missing for less than 1% of the pipes. Based on the data gap results from the data attribute analysis, the Consultant will develop a methodology to populate pipe attribute data gaps for the installation date, where this information is not complete in the GIS for pipe segments included in the analysis.

B. Service Life Estimation:

The Consultant will use typical industry standards, knowledge from County staff, and/or professional judgement to estimate the average life expectancy for each material type within the raw water main system for use in developing related risk criteria.

C. Risk Framework Development:

In coordination with the County, the Consultant will develop initial raw water main likelihood of failure (LOF) and consequence of failure (COF) criteria used to determine

the risk (e.g., pipe size, age, proximity to critical customers/facilities, operating pressures, work history, breaks, or leaks, soil corrosion, roads, railroads, water bodies, etc.) and respective scoring methodology. In coordination with the County, the Consultant will review/define the foundation for how the risk model will be set-up and delivery of results including review of risk classifications/management strategy groups for planning level R&R needs, typically set-up as a 5x5 risk matrix with defined groupings. The risk framework and selected risk criteria will be coordinated for use in all risk assessments. Consultant will submit a data request for available data to support the risk criteria review and development. Data should be provided in Excel spreadsheet, GIS shapefile or geodatabase format, and, where applicable, should include the related pipe ID for data linking.

Task 206 – Renewal and Replacement Planning & Decision Tree Development

In coordination with the County, the Consultant will develop a decision tree to support renewal and replacement planning for each of the County's respective systems, water main, gravity main, force main, reclaimed water main and raw water main. The decision process will identify priority groups based on the risk classification and additional selected criteria to determine appropriate management strategies such as replacement, inspection, monitoring, or no action within each County system. Results from the risk prioritization models will be used to support the decision tree development. Upon completion of the decision tree, the Consultant will assign the management strategy to each pipe segment within each system.

Task 207 – Technical Memorandum and Risk Summary Dashboard

- A. Technical Memorandum: The Consultant will submit a draft technical memorandum (TM) summarizing the horizontal asset risk analysis effort and results for review by the County. The Consultant will meet with the County to discuss the draft TM and will revise the TM based on comments provided by the County. Subsequently, the Consultant will issue the final TM. TMs will be submitted in pdf format; hard copies will not be provided.
- B. Dashboard: The Consultant will develop either an ArcGIS on-line or PowerBI dashboard presenting the risk results summary to support review of the final results. Access to the PowerBI or ArcGIS on-line dashboard will be provided to selected County staff (prefer to use existing County ArcGIS on-line accounts or County PowerBI Pro license, if

available) for the duration of the Project. It is anticipated that the County will select either the ArcGIS on-line platform or PowerBI platform for use in developing the risk summary dashboard as part of this scope.

- C. Stakeholder Presentation: The Consultant will prepare presentation materials to conduct a Horizontal Asset Risk Analysis Results Workshop with County stakeholders.

Task 208 – Risk Assessment User’s Manual

Consultant will prepare and provide the County with a guidance document/user manual outlining the steps to update the risk model.

C. Deliverables

The Consultant shall prepare and submit to the County, including electronic format when applicable, the following deliverables:

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Task	Activity	Deliverable
102	Meetings	Meeting agenda and minutes
201	Water Main Risk Assessment	One (1) electronic copy of the following: <ul style="list-style-type: none"> • Water main data quality analysis tables • Water Main COF and LOF table (risk framework) • Water Main Risk Model
202	Gravity Main Risk Assessment	One (1) electronic copy of the following: <ul style="list-style-type: none"> • Gravity main data quality analysis figures and tables • Gravity Main COF and LOF table (risk framework) • Gravity Main Risk Model
203	Force Main Risk Assessment	One (1) electronic copy of the following: <ul style="list-style-type: none"> • Force main data quality analysis figures and tables • Force Main COF and LOF table (risk framework) • Force Main Risk Model
204	Reclaimed Water Main Risk Assessment	One (1) electronic copy of the following: <ul style="list-style-type: none"> • Reclaimed water main data quality analysis figures and tables • Reclaimed water Main COF and LOF table (risk framework) • Reclaimed water Main Risk Model
205	Raw Water Main Risk Assessment	One (1) electronic copy of the following: <ul style="list-style-type: none"> • Raw water main data quality analysis figures and tables • Raw water Main COF and LOF table (risk framework) • Raw water Main Risk Model
206	Rehabilitation Planning & Decision Tree Development	<ul style="list-style-type: none"> • Water Main Rehabilitation Decision Tree • Gravity Main Rehabilitation Decision Tree • Force Main Rehabilitation Decision Tree • Reclaimed water Main Rehabilitation Decision Tree • Raw water Main Rehabilitation Decision Tree
207	Technical Memorandum	One (1) electronic copy of the draft and final TM
208	Training	Risk Model User's Manual

D. Schedule

Consultant will proceed with the services identified herein immediately upon receipt of an executed copy of this Consultant Services Authorization and a formal Notice-to-Proceed from the County. The projected schedule for the performance of services described herein is included as Attachment A-1. An updated electronic version of the Project schedule in Microsoft Project will be provided to the County within 10 working days from the issuance of the Notice-to-Proceed. Delivery of the schedule may be in other electronic formats so long as they accurately portray the approved scope of services with sufficient detail subject to staff approval.

E. Compensation

This Consultant Services Authorization establishes a not-to-exceed cost of \$371,385. Compensation for the services performed under this Consultant Services Authorization shall be on an hourly, not-to-exceed basis using the current hourly rate schedule as set forth in Master Consulting Agreement 18-066. Other direct costs or expenses incurred in connection with this Consultant Services Authorization will not be invoiced as these expenses have been accounted for in the rate multiplier associated with the Master Consulting Agreement referenced above. A summary of the estimated labor costs is provided in Attachment A-2 for reference only. Each invoice submittal shall include a tabular summary of the originally estimated labor costs by phase in accordance with Attachment A-2, fees invoiced to date, and the balance remaining per phase. The transfer of funds between defined phases is not permitted unless approved in advance in writing by the County Utilities Director. To request consideration for such a transfer, the Consultant must submit satisfactory written justification to transfer unused funds from phases with completed tasks or tasks clearly tracking under budget to phases with tasks requiring additional funding. In addition, the transfer of funds shall not exceed the total authorized fee for the Project.

The Consultant will minimally provide a consultant invoice summary with each invoice, based on a mutually agreed-upon breakdown of phases and tasks in Attachment A-2 that reflect the effort and deliverables submitted to the County. The summary will depict the overall phases, associated budgets, amounts invoiced to date, and balance remaining. Invoices for compensation submitted by the Consultant will include the reviewed and approved consultant invoice summary, an updated Project schedule, notarized affidavits, and the monthly status report.

Invoices for not-to-exceed projects shall be accompanied by time and task records for all billable hours appearing on the invoice. Additional documentation may be requested by the County and, if so requested, shall be furnished by the Consultant to the County Auditor's satisfaction. In addition, all invoices shall be submitted with the Consultant Services Authorization number, purchase order number, and the Polk County Utilities Project and Records Room numbers on the invoice.

F. County's Responsibilities

The County will provide the following information to the Consultant and / or perform the following services related to the Project:

1. GIS files of the water, gravity, force main, reclaimed water and raw water system components.
2. Available gravity sewer main CCTV data.
3. Available main break records, sanitary sewer overflow (SSO) records, etc.

G. Services Not Included

The following services are not included in the Scope of Services for the Project:

1. Condition assessment of horizontal assets
2. Risk analysis of non-horizontal assets
3. Project identification
4. Capital improvement planning
5. Training
6. Business intelligence development
7. Lucity support
8. CCTV data clean-up
9. Review of current PM schedules for gravity main cleaning and inspections
10. Opinions of cost

H. Assumptions

The Scope of Services and compensation arrangement outlined in this Consultant Services Authorization are based on the following assumptions:

1. Water Main Risk assessment will include all active, County-owned distribution and transmission mains in a single model using the same risk criteria. No changes to the GIS water main network will be made. Pipe segments as represented in the County's GIS will be used as-is in the risk model.
2. Gravity Main Risk assessment will include all active, County-owned gravity mains in a single model using the same risk criteria. No changes to the GIS gravity main network will be made. Pipe segments as represented in the County's GIS will be used as-is in the risk model.
3. Force Main Risk assessment will include all active, County-owned force mains in a single model using the same risk criteria.
4. Reclaimed Water Risk assessment will include all active, County-owned recycled water mains in a single model using the same risk criteria. No changes to the GIS recycled water main network will be made. Pipe segments as represented in the County's GIS will be used as-is in the risk model.
5. Raw Water Risk assessment will include all active, County-owned raw water mains in a single model using the same risk criteria. No changes to the GIS recycled water main network will be made.
6. Work order historical records will be used as provided by County. Pipe ID is required on the work order to be able to link to a GIS pipe record.
7. CCTV inspection records, related defects/observations/structure/O&M ratings, etc., are not anticipated to be used directly in the risk assessment for gravity mains. Alternatively, representative condition based on the County's understanding of the condition will be used to support the likelihood of failure criteria for gravity mains.
8. Alignment of the LOF and COF categories (e.g. representative condition, environmental factors, financial/economic impacts, social/public service impacts, etc.) will be aligned for a standardized approach across the water system, collection system, and reclaimed water system. COF is anticipated to be calculated using the same criteria (where applicable between water, sewer, and reclaimed water) and scoring strategy for all systems.

9. Consultant's risk model tools will be used for all assessments. Once the risk model tools are configured for the first system, it is anticipated that the same risk model tools will be used for all risk assessments with minor changes made as needed for subsequent risk models based on risk criteria.
10. It is anticipated that the risk framework, model set-up, and delivery of results will be the same for all risk assessments.
11. Meetings/workshops will be facilitated in-person.

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ATTACHMENT A-2

Polk County, Florida Black & Veatch Consultant Services Authorization 18-066-04 Horizontal Asset Risk Analysis										
Hourly Bill Rate:	Project Manager III	Sr. Technical Expert	Sr. Technical Specialist	Project Engineer I	Technical Specialist	Finance / Accountant II	Administrative II	Total Hours	Total Labor	Total Fee
Phase 100 - Project Management and Administration	261	235	230	126	192	101	81	373	\$58,575	\$69,575
101 Project Management	8	81	64	124	0	48	48	148	\$21,080	\$21,080
102 Meetings	4	48				48		225	\$39,515	\$39,515
1 Kick-Off Meeting	2	2	4	8				16	\$2,944	\$2,944
2 Data Quality Analyses Workshop (Five total, one for each system)		10	20	40				70	\$12,110	\$12,110
3 Gravity Main System Operations Interview	3	4	4	4				11	\$2,141	\$2,141
4 Criteria Framework Development Workshop (Five total, one for each system)		10	20	40				70	\$12,110	\$12,110
5 Rehabilitation Planning & Decision Tree Development (Planning Workshop + Final Results)		4	8	16				28	\$4,844	\$4,844
6 Technical Memorandum Review Workshop		2	4	8				14	\$2,422	\$2,422
7 Horizontal Asset Risk Analysis Results Stakeholder Workshop	2	2	4	8				16	\$2,944	\$2,944
Phase 200 - Horizontal Asset Risk Assessment	8	118	458	1284	16	0	24	1908	\$305,810	\$305,810
201 Water Main Risk Assessment										
A. Data Quality Analyses		8	16	40				64	\$10,720	\$10,720
B. CCTV Data Review		0	4	8				14	\$2,422	\$2,422
C. Service Life Estimates		2	4	8				14	\$2,422	\$2,422
D. Risk Framework Development		6	24	40				70	\$12,080	\$12,080
E. Model Development and Execution		8	60	200				268	\$41,480	\$41,480
202 Gravity Main Risk Assessment								0	\$0	\$0
A. Data Quality Analyses		8	16	40				64	\$10,720	\$10,720
B. CCTV Data Review		0	4	8				20	\$2,984	\$2,984
C. Service Life Estimates		2	4	8				14	\$2,422	\$2,422
D. Risk Framework Development		6	24	40				70	\$12,080	\$12,080
E. Model Development and Execution		8	60	200				268	\$41,480	\$41,480
203 Force Main Risk Assessment								0	\$0	\$0
A. Data Quality Analyses		8	8	32				48	\$7,848	\$7,848
B. Service Life Estimates		2	4	8				14	\$2,422	\$2,422
C. Risk Framework Development		2	8	20				30	\$4,880	\$4,880
D. Model Development and Execution		2	32	100				134	\$20,730	\$20,730
204 Recycled Water Risk Assessment								0	\$0	\$0
A. Data Quality Analyses		2	4	16				22	\$3,454	\$3,454
B. Service Life Estimates		2	4	4				10	\$1,906	\$1,906
C. Risk Framework Development		2	8	16				26	\$4,374	\$4,374
D. Model Development and Execution		2	20	80				102	\$15,390	\$15,390
205 Raw Water Main Risk Assessment								0	\$0	\$0
A. Data Quality Analyses		2	4	16				22	\$3,454	\$3,454
B. Service Life Estimates		2	4	4				10	\$1,906	\$1,906
C. Risk Framework Development		2	8	16				26	\$4,374	\$4,374
D. Model Development and Execution		2	20	80				102	\$15,390	\$15,390
206 Rehabilitation Planning & Decision Tree Development								0	\$0	\$0
A. Water Rehabilitation Planning & Decision Tree Development		2	16	40				58	\$9,310	\$9,310
B. Gravity Rehabilitation Planning & Decision Tree Development		2	12	24				38	\$6,326	\$6,326
C. Force Main Rehabilitation Planning & Decision Tree Development		2	12	24				38	\$6,326	\$6,326
D. Recycled Water Rehabilitation Planning & Decision Tree Development		2	4	8				14	\$2,422	\$2,422
E. Raw Water Rehabilitation Planning & Decision Tree Development		2	4	8				14	\$2,422	\$2,422
207 Technical Memorandum										
A. Technical Memorandum (All Five Systems Represented)	4	16	40	80			24	164	\$26,268	\$26,268
B. Dashboard Development		4	16	40	16			76	\$12,852	\$12,852
C. Stakeholder Preparation	4	8	16	32				60	\$10,732	\$10,732
208 Risk Assessment User's Manual										
A. User's Manual		2	2	24				28	\$4,026	\$4,026
Contingency	0	0	0	0	0	0	0	0	\$0	\$0
Contingency								0	\$0	\$0
TOTAL HOURS	16	108	522	1408	16	48	72	2,281	\$366,385	\$371,385
TOTAL COST	\$4,176	\$46,745	\$120,060	\$181,632	\$3,072	\$4,848	\$5,832	\$0	\$0	\$371,385



Polk County Utilities
Professional Services Fee Schedule
September 2018

This document presents Black & Veatch Corporation rates for the initial year of the contract. Renewal term rates may be adjusted per Polk County guidelines.

Table 1: Black & Veatch Professional Services Fee Schedule

BLACK & VEATCH LABOR CLASSIFICATION	RAW RATE	BILLING RATE
Project Officer/ Director	\$86 - \$92	\$261 - \$281
Senior Technical Expert	\$76 - \$89	\$232 - \$271
Project Manager I	\$63 - \$70	\$194 - \$213
Project Manager II	\$70 - \$81	\$213 - \$247
Project Manager III	\$81 - \$86	\$247 - \$261
Engineering Manager	\$63 - \$68	\$194 - \$208
Senior Engineering Manager	\$68 - \$73	\$208 - \$223
Technical Specialist	\$62 - \$67	\$189 - \$203
Senior Technical Specialist	\$67 - \$76	\$203 - \$232
Senior Engineer I	\$57 - \$60	\$174 - \$184
Senior Engineer II	\$60 - \$70	\$184 - \$213
Senior Engineer III	\$70 - \$74	\$213 - \$227
Project Engineer I	\$40 - \$44	\$121 - \$136
Project Engineer II	\$44 - \$52	\$136 - \$158
Project Engineer III	\$52 - \$57	\$158 - \$174
Geologist	\$51 - \$58	\$155 - \$178
Senior Geologist	\$58 - \$62	\$178 - \$189
Environmental Scientist	\$38 - \$44	\$116 - \$136
Senior Environmental Scientist I	\$47 - \$51	\$143 - \$155
Senior Environmental Scientist II	\$51 - \$62	\$155 - \$188
Environmental/Wetlands Specialist I	\$38 - \$44	\$116 - \$136
Environmental/Wetlands Specialist II	\$44 - \$49	\$136 - \$150
Staff Engineer I	\$31 - \$34	\$95 - \$105
Staff Engineer II	\$34 - \$40	\$105 - \$121
GIS Specialist I	\$35 - \$41	\$107 - \$126
GIS Specialist II	\$41 - \$50	\$126 - \$153
GIS Specialist III	\$50 - \$57	\$153 - \$172



BLACK & VEATCH LABOR CLASSIFICATION	RAW RATE	BILLING RATE
CADD/Technician I	\$28 - \$30	\$85 - \$91
CADD/Technician II	\$30 - \$35	\$91 - \$107
CADD/Technician III	\$35 - \$43	\$107 - \$132
Resident Inspector I	\$38 - \$44	\$116 - \$136
Resident Inspector II	\$44 - \$54	\$136 - \$165
Project Controls/Scheduling Specialist	\$44 - \$52	\$136 - \$160
Construction Manager	\$60 - \$70	\$184 - \$213
Senior Construction Manager	\$70 - \$76	\$213 - \$232
Technical Editor I	\$31 - \$33	\$95 - \$101
Technical Editor II	\$33 - \$43	\$101 - \$130
Administrative I	\$23 - \$25	\$70 - \$77
Administrative II	\$25 - \$28	\$77 - \$85
Administrative III	\$28 - \$34	\$85 - \$103
Cost Estimator I	\$37 - \$44	\$111 - \$136
Cost Estimator II	\$44 - \$59	\$136 - \$179
Cost Estimator III	\$59 - \$76	\$179 - \$230
Finance/Accountant I	\$29 - \$31	\$87 - \$95
Finance/Accountant II	\$31 - \$35	\$95 - \$107

Notes: Misc. expenses included in the billing rates (such as travel mileage, copies, shipping, etc.)

EXHIBIT C – REIMBURSABLE COST SCHEDULE

Not applicable



EXHIBIT D

CERTIFICATE OF LIABILITY INSURANCE

11/1/2022

DATE (MM/DD/YYYY)

6/10/2022

THIS CERTIFICATE IS ISSUED AS A MATTER OF INFORMATION ONLY AND CONFERS NO RIGHTS UPON THE CERTIFICATE HOLDER. THIS CERTIFICATE DOES NOT AFFIRMATIVELY OR NEGATIVELY AMEND, EXTEND OR ALTER THE COVERAGE AFFORDED BY THE POLICIES BELOW. THIS CERTIFICATE OF INSURANCE DOES NOT CONSTITUTE A CONTRACT BETWEEN THE ISSUING INSURER(S), AUTHORIZED REPRESENTATIVE OR PRODUCER, AND THE CERTIFICATE HOLDER.

IMPORTANT: If the certificate holder is an ADDITIONAL INSURED, the policy(ies) must have ADDITIONAL INSURED provisions or be endorsed. If SUBROGATION IS WAIVED, subject to the terms and conditions of the policy, certain policies may require an endorsement. A statement on this certificate does not confer rights to the certificate holder in lieu of such endorsement(s).

PRODUCER Lockton Companies 444 W. 47th Street, Suite 900 Kansas City MO 64112-1906 (816) 960-9000 kctsu@lockton.com	CONTACT NAME: PHONE (A/C, No, Ext): E-MAIL ADDRESS:	FAX (A/C, No):
	INSURER(S) AFFORDING COVERAGE	
INSURED 1482177 BLACK & VEATCH CORPORATION 11401 LAMAR OVERLAND PARK KS 66211 MURIN, JIM	INSURER A : Zurich American Insurance Company	NAIC # 16535
	INSURER B : Lexington Insurance Company	19437
	INSURER C :	
	INSURER D :	
	INSURER E :	
	INSURER F :	

COVERAGES CERTIFICATE NUMBER: 18614041 REVISION NUMBER: XXXXXXXX

THIS IS TO CERTIFY THAT THE POLICIES OF INSURANCE LISTED BELOW HAVE BEEN ISSUED TO THE INSURED NAMED ABOVE FOR THE POLICY PERIOD INDICATED. NOTWITHSTANDING ANY REQUIREMENT, TERM OR CONDITION OF ANY CONTRACT OR OTHER DOCUMENT WITH RESPECT TO WHICH THIS CERTIFICATE MAY BE ISSUED OR MAY PERTAIN, THE INSURANCE AFFORDED BY THE POLICIES DESCRIBED HEREIN IS SUBJECT TO ALL THE TERMS, EXCLUSIONS AND CONDITIONS OF SUCH POLICIES. LIMITS SHOWN MAY HAVE BEEN REDUCED BY PAID CLAIMS.

INSR LTR	TYPE OF INSURANCE	ADDL INSR	SUBR WVD	POLICY NUMBER	POLICY EFF (MM/DD/YYYY)	POLICY EXP (MM/DD/YYYY)	LIMITS
A	<input checked="" type="checkbox"/> COMMERCIAL GENERAL LIABILITY	Y	Y	GLO 4641358	11/1/2021	11/1/2022	EACH OCCURRENCE \$ 2,000,000
A	CLAIMS-MADE <input checked="" type="checkbox"/> OCCUR			GLO 1365630	11/1/2021	11/1/2022	DAMAGE TO RENTED PREMISES (Ea occurrence) \$ 100,000
							MED EXP (Any one person) \$ 10,000
							PERSONAL & ADV INJURY \$ 2,000,000
							GENERAL AGGREGATE \$ 4,000,000
							PRODUCTS - COMP/OP AGG \$ 4,000,000
							\$
A	AUTOMOBILE LIABILITY	Y	Y	BAP 4641355 (AOS)	11/1/2021	11/1/2022	COMBINED SINGLE LIMIT (Ea accident) \$ 2,000,000
	<input checked="" type="checkbox"/> ANY AUTO						BODILY INJURY (Per person) \$ XXXXXXXX
	<input checked="" type="checkbox"/> OWNED AUTOS ONLY						BODILY INJURY (Per accident) \$ XXXXXXXX
	<input checked="" type="checkbox"/> HIRED AUTOS ONLY						PROPERTY DAMAGE (Per accident) \$ XXXXXXXX
							\$ XXXXXXXX
	UMBRELLA LIAB			NOT APPLICABLE			EACH OCCURRENCE \$ XXXXXXXX
	EXCESS LIAB						AGGREGATE \$ XXXXXXXX
	DED						\$ XXXXXXXX
	RETENTION \$						
A	WORKERS COMPENSATION AND EMPLOYERS' LIABILITY	Y/N	Y	WC 4641353 (AOS)	11/1/2021	11/1/2022	<input checked="" type="checkbox"/> PER STATUTE <input type="checkbox"/> OTH-ER
A	ANY PROPRIETOR/PARTNER/EXECUTIVE OFFICER/MEMBER EXCLUDED? (Mandatory in NH)	<input checked="" type="checkbox"/> N	N/A	WC 4641354 (ID, MA, WI)	11/1/2021	11/1/2022	E.L. EACH ACCIDENT \$ 1,000,000
A	If yes, describe under DESCRIPTION OF OPERATIONS below			WC 1365632	11/1/2021	11/1/2022	E.L. DISEASE - EA EMPLOYEE \$ 1,000,000
A				WC 1365631 (NE)	11/1/2021	11/1/2022	E.L. DISEASE - POLICY LIMIT \$ 1,000,000
B	PROFESSIONAL LIABILITY	N	N	026030198	11/1/2021	11/1/2022	\$10,000,000 PER CLAIM \$10,000,000 ANNUAL AGGREGATE

DESCRIPTION OF OPERATIONS / LOCATIONS / VEHICLES (ACORD 101, Additional Remarks Schedule, may be attached if more space is required)

CONTRACT NUMBER: 18-066-04; PROJECT NAME: PCU HORIZONTAL ASSET RISK ASSESSMENT; PROJECT MANAGER: MURIN, JIM; GENERAL LIABILITY AND AUTO LIABILITY ARE PRIMARY AND NON-CONTRIBUTORY. POLK COUNTY IS INCLUDED AS AN ADDITIONAL INSURED ON THE GENERAL LIABILITY AND AUTO LIABILITY POLICIES. WAIVER OF SUBROGATION IN FAVOR OF THE ADDITIONAL INSURED ON THE GENERAL LIABILITY, AUTO LIABILITY, AND WORKER'S COMPENSATION POLICIES. 30 DAY NOTICE OF CANCELLATION APPLIES, 10 DAYS NOTICE FOR NON-PAYMENT OF PREMIUM.

CERTIFICATE HOLDER

CANCELLATION See Attachments

18614041
POLK COUNTY
A POLITICAL SUBDIVISION OF THE
STATE OF FLORIDA
330 WEST CHURCH ST
BARTOW FL 33880

SHOULD ANY OF THE ABOVE DESCRIBED POLICIES BE CANCELLED BEFORE THE EXPIRATION DATE THEREOF, NOTICE WILL BE DELIVERED IN ACCORDANCE WITH THE POLICY PROVISIONS.

AUTHORIZED REPRESENTATIVE

POLICY NUMBER: GLO 4641358, GLO 1365630

COMMERCIAL GENERAL LIABILITY
CG 20 10 12 19

THIS ENDORSEMENT CHANGES THE POLICY. PLEASE READ IT CAREFULLY.

**ADDITIONAL INSURED – OWNERS, LESSEES OR
CONTRACTORS – SCHEDULED PERSON OR
ORGANIZATION**

This endorsement modifies insurance provided under the following:

COMMERCIAL GENERAL LIABILITY COVERAGE PART

SCHEDULE

Name Of Additional Insured Person(s) Or Organization(s)	Location(s) Of Covered Operations
As required by written contract	As required by written contract
Information required to complete this Schedule, if not shown above, will be shown in the Declarations.	

A. Section II – Who Is An Insured is amended to include as an additional insured the person(s) or organization(s) shown in the Schedule, but only with respect to liability for "bodily injury", "property damage" or "personal and advertising injury" caused, in whole or in part, by:

1. Your acts or omissions; or
2. The acts or omissions of those acting on your behalf;

in the performance of your ongoing operations for the additional insured(s) at the location(s) designated above.

However:

1. The insurance afforded to such additional insured only applies to the extent permitted by law; and

If coverage provided to the additional insured is required by a contract or agreement, the insurance afforded to such additional insured will not be broader than that which you are required by the contract or agreement to provide for such additional insured.

B. With respect to the insurance afforded to these additional insureds, the following additional exclusions apply:

This insurance does not apply to "bodily injury" or "property damage" occurring after:

1. All work, including materials, parts or equipment furnished in connection with such work, on the project (other than service, maintenance or repairs) to be performed by or on behalf of the additional insured(s) at the location of the covered operations has been completed; or
2. That portion of "your work" out of which the injury or damage arises has been put to its intended use by any person or organization other than another contractor or subcontractor engaged in performing operations for a principal as a part of the same project.

C. With respect to the insurance afforded to these additional insureds, the following is added to **Section III – Limits Of Insurance:**

If coverage provided to the additional insured is required by a contract or agreement, the most we will pay on behalf of the additional insured is the amount of insurance:

1. Required by the contract or agreement; or

2. Available under the applicable limits of insurance;

whichever is less.

This endorsement shall not increase the applicable limits of insurance.

Waiver Of Subrogation (Blanket) Endorsement

Policy No.	Eff.Date of Pol.	Exp. Date of Pol.	Eff. Date of End.	Producer	Add'l. Prem	Return Prem.
GLO 4641358	11/1/2021	11/1/2022	11/1/2021			
GLO 1365630	11/1/2021	11/1/2022	11/1/2021			

Named Insured: BLACK & VEATCH CORPORATION

This endorsement modifies the insurance provided under the following:

Commercial General Liability Coverage Part

The following is added to the **Transfer Of Rights Of Recovery Against Others To Us Condition:**

If you are required by a written contract or agreement, which is executed before a loss, to waive your rights of recovery from others, we agree to waive our rights of recovery. This waiver of rights shall not be construed to be a waiver with respect to any other operations in which the insured has no contractual interest.

POLICY NUMBER: BAP 4641355 (AOS)

**COMMERCIAL AUTO
CA 20 48 02 99**

THIS ENDORSEMENT CHANGES THE POLICY. PLEASE READ IT CAREFULLY.

DESIGNATED INSURED

This endorsement modifies insurance provided under the following:

BUSINESS AUTO COVERAGE
GARAGE COVERAGE FORM
MOTOR CARRIER COVERAGE FORM
TRUCKERS COVERAGE FORM

With respect to coverage provided by this endorsement, the provisions of the Coverage Form apply unless modified by this endorsement.

This endorsement identifies person(s) or organization(s) who are "insureds" under the Who Is An Insured Provision of the Coverage Form. This endorsement does not alter coverage provided in the Coverage Form.

This endorsement changes the policy effective on the inception date of the policy unless another date is indicated below.

Endorsement Effective: 11/1/2021

Named Insured: BLACK & VEATCH CORPORATION

SCHEDULE

Name of Person(s) or Organization(s): AS REQUIRED PER WRITTEN CONTRACT

(If no entry appears above, information required to complete this endorsement will be shown in the Declarations as applicable to the endorsement.)

Each person or organization shown in the Schedule is an "insured" for Liability Coverage, but only to the extent that person or organization qualifies as an "insured" under the Who Is An Insured Provision contained in **Section II** of the Coverage Form.

Waiver of Transfer Of Rights Of Recovery Against Others To Us

Policy No.	Eff.Date of Pol.	Exp. Date of Pol.	Eff. Date of End.	Producer No.	Add'l. Prem	Return Prem.
BAP 4641355 (AOS)	11/1/2021	11/1/2022	11/1/2021			

This endorsement is issued by the company named in the Declarations. It changes the policy on the effective date listed above at the hour stated in the Declarations.

THIS ENDORSEMENT CHANGES THE POLICY. PLEASE READ IT CAREFULLY.

Named Insured: BLACK & VEATCH CORPORATION

Address (including ZIP code): 11401 LAMAR OVERLAND PARK KS 66211

This endorsement modifies insurance provided under the:

Business Auto Coverage Form

Truckers Coverage Form

Garage Coverage Form

Motor Carrier Coverage Form

SCHEDULE

Name of the Person or Organization:

AS REQUIRED BY WRITTEN CONTRACT

We waive any right of recovery we may have against the designated person or organization shown in the schedule because of payments we make for injury or damage caused by an "accident" or "loss" resulting from the ownership, maintenance, or use of a covered "auto" for which a Waiver of Subrogation is required in conjunction with work performed by you for the designated person or organization. The waiver applies only to the designated person or organization shown in the schedule.

WC 00 03 13

WAIVER OF OUR RIGHT TO RECOVER FROM OTHERS ENDORSEMENT

We have the right to recover our payments from anyone liable for an injury covered by this policy. We will not enforce our right against the person or organization named in the Schedule. (This agreement applies only to the extent that you perform work under a written contract that requires you to obtain this agreement from us.)

This agreement shall not operate directly or indirectly to benefit anyone not named in the Schedule.

Schedule

AS REQUIRED PER WRITTEN CONTRACT

This endorsement changes the policy to which it is attached and is effective on the date issued unless otherwise stated.

(The information below is required only when this endorsement is issued subsequent to preparation of the policy.)

Effective Policy No. WC 4641353 (AOS), WC 4641354 (ID, MA, WI), WC 1365632, WC 1365631 (NE)

Insured: BLACK & VEATCH CORPORATION

Effective Date: 11/1/2021